Access DB# 112871

SEARCH REQUEST FORM

Scientific and Technical Inf rmation Center

Requester's Full Name: Jeayuh Lin Examiner #: 77401 Date: 1/28/04
Art Unit: 3737 Phone Number 30 6-5440 Serial Number: 04/828,078
Mail Box and Bldg/Room Location: CP1 4C08 Results Format Preferred (circle): PAPER DISK E-MAIL
4-C08

If more than one search is submitted, please prioritize searches in order of need. CP2 4C08

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Method for diagnosis of & Prognosis of Damaged Tissue

Inventors (please provide full names): Jenny A. Tyler

Earliest Priority Filing Date: 4/6/00

***For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.**

Priority: 60/195,624

Please search for MR tissue analysis

See claim 1 (Allowed)

- using selected MR parameter → T_1, T_2, Magnetization Transfer, & Magnetization (See Claim 2)
- Acquiring MR signals
- Quantifying signals on a pixel by pixel basis
- Correlating above parameter w/property of tissue.

****

STAFF USE ONLY	Type of Search		Vendors and cost where applicable	
Searcher: John Sims	NA Sequence (#)		STN	
Searcher Phone #: 308-4836	AA Sequence (#)		Dialog	✓
Searcher Location: EIC 3700	Structure (#)		Questel/Orbit	
Date Searcher Picked Up:	Bibliographic		Dr.Link	
Date Completed: 1/30/04	Litigation		Lexis/Nexis	
Searcher Prep & Review Time:	Fulltext		Sequence Systems	
Clerical Prep Time:	Patent Family		WWW/Internet	
Online Time:	Other		Other (specify)	

PTO-1590 (8-01)

13/7/1 (Item 1 from file: 2)
DIALOG(R)File 2:INSPEC

6600095 INSPEC Abstract Number: A2000-13-8760I-008, B2000-07-7510N-009, C2000-07-7330-005
Title: Evaluation of water content by spatially resolved transverse relaxation **times of human articular** cartilage
Author(s): Lusse, S.; Claassen, H.; Gehrke, T.; Hassenpflug, J.; Schunke, M.; Heller, M.; Gluier, C.-C.
Author Affiliation: Dept. of Diagnostic Radiol., Kiel Univ., Germany
Journal: Magnetic Resonance Imaging vol.18, no.4 p.423-30
Publisher: Elsevier,
Publication Date: May 2000 Country of Publication: USA
CODEN: MRIMDQ ISSN: 0730-725X
SICI: 0730-725X(200005)18:4L.423:EWCS;1-Y
Material Identity Number: F149-2000-004
U.S. Copyright Clearance Center Code: 0730-725X/2000/$20.00
Language: English Document Type: Journal Paper (JP)
Treatment: Experimental (X)
Abstract: Non-invasive assessment of **cartilage properties** , specifically water content, could prove helpful in the diagnosis of early degenerative joint diseases. **Transverse relaxation** times T/sub 2/ of human articular **cartilage** (34 **cartilage** slices of three donors) were measured on a **pixel** -by- **pixel** basis in a clinical whole body **MR** system in vitro. In vivo feasibility to measure quantitative T/sub 2/ maps was shown for human patellar **cartilage** . The relaxation times of **cartilage** with collagen in the radial zone oriented perpendicular to the magnetic field increased from approximately 10 ms near the bone to approximately 60 ms near the articular surface. **Cartilage** water content of the tibial plateau and femoral condyles could be determined from the correlation with T/sub 2/(R/sup 2/=0.71) with an error of approximately 2 wt.%. In vivo, directional variation would need to be considered. If confirmed in vivo, T/sub 2/ measurements could potentially serve as a non-invasive tool for the evaluation of the status and distribution of water content in articular **cartilage** . (19 Refs)
Subfile: A B C

13/7/2 (Item 2 from file: 2)
DIALOG(R)File 2:INSPEC

4802136 INSPEC Abstract Number: A9423-8760G-015
Title: In vivo tissue **characterization of human brain by chisquares** parameter **maps: multiparameter proton T/sub 2/-relaxation analysis**
Author(s): Kwan Hon Cheng
Author Affiliation: Dept. of Phys., Texas Tech. Univ., Lubbock, TX, USA
Journal: Magnetic Resonance Imaging vol.12, no.7 p.1099-109
Publication Date: 1994 Country of Publication: UK
CODEN: MRIMDQ ISSN: 0730-725X
U.S. Copyright Clearance Center Code: 0730-725X/94/$6.00+.00
Language: English Document Type: Journal Paper (JP)
Treatment: Theoretical (T); Experimental (X)
Abstract: The heterogeneous proton **MR** relaxation decay process in human brain has been investigated by performing region-of-interest and **pixel** -by- **pixel** calculations on the multiecho **MR** images with different repetition times (TR) of human brains using a clinical 1.5-T whole-body superconducting **MR** scanner. Based on the monoexponential, biexponential,

and continuous Gaussian distribution relaxation models, first-order proton relaxation **parameters** (proton density, T/sub 1/ and T/sub 2/) and higher-order transverse proton relaxation **parameters** (T/sub 2/-long, T/sub 2/-short, T/sub 2/-long fraction, T/sub 2/-average, and T/sub 2/-distribution width) were calculated. On the basis of an F test (p<.01), the statistical significance of the higher-order (biexponential and distribution) fits over the monoexponential fit was evaluated. Here, a significant improvement in the biexponential fit was found for some of the regions containing the ventricular cerebrospinal fluid (CSF) (T/sub 2/-long=2780+or-570 ms; T/sub 2/-short=159+or-42 ms; T/sub 2/-long fraction=0.51+or-0.08 ms) due to the partial volume effect but not for most of the white matter (WM). On the other hand, an improvement of fit to WM was obtained when distribution (T/sub 2/-average=80+or-8 ms; T/sub 2/-distribution half-width=21+or-14 ms) as opposed to monoexponential (T/sub 2/=89+or-10 ms) fit was used. As internal controls, tubes of CuSO/sub 4/ solution (T/sub 2/=1293+or-128 ms) and agarose gel (T/sub 2/=111+or-10 ms) which have similar T/sub 2/ values as the CSF and WM of the brain, respectively, were attached to the human head and imaged concomitantly. No significance improvements in either the biexponential or distribution fits over the monoexponential fit were found for all the controls. In addition to the first-order and higher-order relaxation **parameter** maps, the monoexponential chisquares, as well as the chisquares ratio (chisquares of the monoexponential fit divided by that of the higher-order fit), maps were also generated. Unlike the higher-order T/sub 2/-relaxation **parameter** maps, the chisquares **parameter** maps required no selection of any predetermined statistical confidence level. Therefore, these chisquares **parameter** maps provided a somewhat nonsubjective spatial profile of the heterogeneous **transverse relaxation** process in the brain. The author's results led to the proposal that the use of chisquares **parameter** maps, together with the first-and higher-order relaxation **parameter** maps, may further improve the in vivo **tissue** characterization capability of **MRI** in future clinical diagnosis and staging of intracranial diseases. (17 Refs)
Subfile: A

13/7/3 (Item 3 from file: 2)
DIALOG(R)File 2:INSPEC

03766922 INSPEC Abstract Number: A91005805
Title: Fast and precise T/sub 1/ imaging using a TOMROP sequence
Author(s): Brix, G.; Schad, L.R.; Deimling, M.; Lorenz, W.J.
Author Affiliation: Inst. of Radiol. & Pathophysiol., Heidelberg, West Germany
Journal: Magnetic Resonance Imaging vol.8, no.4 p.351-6
Publication Date: 1990 Country of Publication: UK
CODEN: MRIMDQ ISSN: 0730-725X
U.S. Copyright Clearance Center Code: 0730-725X/90/$3.00+.00
Language: English Document Type: Journal Paper (JP)
Treatment: Experimental (X)
Abstract: Proton spin-lattice (T/sub 1/) relaxation time images were computed from a data set of 32 gradient-echo images acquired with a fast TOMROP (T One by Multiple Read Out Pulses) sequence using a standard whole-body **MR** imager operating at 64 MHz. The data acquisition and analysis method which permits accurate **pixel** -by- **pixel** estimation of T/sub 1/ relaxation times is described. As an example, the T/sub 1/ **parameter** image of a human brain is shown demonstrating an excellent image quality. For white and gray brain matter, the measured **longitudinal relaxation** processes are adequately described by a single-component

least-squares fit, while more than one proton component has to be considered for fatty **tissue** . A quantitative analysis yielded T/sub 1/ values of 547+or-36 msec and 944+or-73 msec for white and gray matter, respectively. (11 Refs)
Subfile: A

13/7/4 (Item 1 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

03584528 Genuine Article#: PJ063 Number of References: 0
(NO REFS KEYED)
Title: IN-VIVO TISSUE **CHARACTERIZATION OF HUMAN BRAIN BY CHISQUARES** PARAMETER **MAPS - MULTIPARAMETER PROTON T-2-RELAXATION ANALYSIS**
Author(s): CHENG KH
Corporate Source: TEXAS TECH UNIV,DEPT PHYS,BIOPHYS LAB,ROOM 108,SCI BLDG,BOX 41051/LUBBOCK//TX/79409
Journal: MAGNETIC RESONANCE IMAGING, 1994, V12, N7, P1099-1109
ISSN: 0730-725X
Language: ENGLISH Document Type: ARTICLE
Abstract: The heterogeneous proton **MR** relaxation decay process in human brain has been investigated by performing region-of-interest and **pixel** -by- **pixel** calculations on the multiecho **MR** images with different repetition times (TR) of human brains using a clinical 1.5-T whole-body superconducting **MR** scanner. Based on the monoexponential, biexponential, and continuous gaussian distribution relaxation models, first-order proton relaxation 1parameters (proton density, T-1 and T-2) and higher-order transverse proton relaxation **parameters** (T-2-long, T-2-short, T-2-long fraction, T-2-average, and T-2-distribution width) were calculated. On the basis of an F test ($p < .01$), the statistical significance of the higher-order (biexponential and distribution) fits over the monoexponential fit was evaluated. Here, a significant improvement in the biexponential fit was found for some of the regions containing the ventricular cerebrospinal fluid (CSF) (T-2-long = 2780 +/- 570 ms; T-2-short = 159 +/- 42 ms; T-2-long fraction = 0.51 +/- 0.08 ms) due to the partial volume effect but not for most of the white matter (WM). On the other hand, an improvement of fit to WM was obtained when distribution (T-2-average = 80 +/- 8 ms; T-2-distribution halfwidth = 21 +/- 4 ms) as opposed to monoexponential (T-2 = 89 +/- 10 ms) fit was used. As internal controls, tubes of CuSO4 solution (T-2 = 1293 +/- 128 ms) and agarose gel (T-2 = 111 +/- 10 ms) which have similar T-2 values as the CSF and WM of the brain, respectively, were attached to the human head and imaged concomitantly. No significance improvements in either the biexponential or distribution fits over the monoexponential fit were found for all the controls. In addition to the first-order and higher-order relaxation **parameter** maps, the monoexponential chisquares, as well as the chisquares ratio (chisquares of the monoexponential fit divided by that of the higher-order fit), maps were also generated. Unlike the higher-order T-2-relaxation **parameter** maps, the chisquares **parameter** maps required no selection of any predetermined statistical confidence level. Therefore, these chisquares **parameter** maps provided a somewhat nonsubjective spatial profile of the heterogeneous **transverse relaxation** process in the brain. Our results led us to propose that the use of chisquares **parameter** maps, together with the first- and higher-order relaxation **parameter** maps, may further improve the in vivo **tissue** characterization capability of **MRI** in future clinical diagnosis and staging of intracranial diseases.

13/7/5 (Item 1 from file: 73)
DIALOG(R)File 73:EMBASE

05890885 EMBASE No: 1994299622
In vivo tissue **characterization of human brain by chisquares** parameter **maps: Multiparameter proton Tinf 2-relaxation analysis**
Kwan Hon Cheng
Biophysics Laboratory, Physics Department, Texas Tech University,Lubbock, TX 79409-1051 United States
Magnetic Resonance Imaging (MAGN. RESON. IMAGING) (United States) 1994, 12/7 (1099-1109)
CODEN: MRIMD ISSN: 0730-725X
DOCUMENT TYPE: Journal; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

The heterogeneous proton **MR** relaxation decay process in human brain has been investigated by performing region-of-interest and **pixel** -by- **pixel** calculations on the multiecho **MR** images with different repetition times (TR) of human brains using a clinical 1.5-T whole-body superconducting **MR** scanner. Based on the monoexponential, biexponential, and continuous gaussian distribution relaxation models, first-order proton relaxation **parameters** (proton density, Tinf 1 and Tinf 2) and higher-order transverse proton relaxation **parameters** (Tinf 2-long, Tinf 2-short, Tinf 2-long fraction, Tinf 2-average, and Tinf 2- distribution width) were calculated. On the basis of an F test ($p < .01$), the statistical significance of the higher-order (biexponential and distribution) fits over the monoexponential fit was evaluated. Here, a significant improvement in the biexponential fit was found for some of the regions containing the ventricular cerebrospinal fluid (CSF) (Tinf 2-long = 2780 +/- 570 ms; Tinf 2-short = 159 +/- 42 ms; Tinf 2-long fraction = 0.51 +/- 0.08 ms) due to the partial volume effect but not for most of the white matter (WM). On the other hand, an improvement of fit to WM was obtained when distribution (Tinf 2- average = 80 +/- 8 ms; Tinf 2-distribution half-width = 21 +/- 4 ms) as opposed to monoexponential (Tinf 2 = 89 +/- 10 ms) fit was used. As internal controls, tubes of CuSOinf 4 solution (Tinf 2 = 1293 +/- 128 ms) and agarose gel (Tinf 2 = 111 +/- 10 ms) which have similar Tinf 2 values as the CSF and WM of the brain, respectively, were attached to the human head and imaged concomitantly. No significance improvements in either the biexponential or distribution fits over the monoexponential fit were found for all the controls. In addition to the first-order and higher-order relaxation **parameter** maps, the monoexponential chisquares, as well as the chisquares ratio (chisquares of the monoexponential fit divided by that of the higher-order fit), maps were also generated. Unlike the higher-order Tinf 2-relaxation **parameter** maps, the chisquares **parameter** maps required no selection of any predetermined statistical confidence level. Therefore, these chisquares **parameter** maps provided a somewhat nonsubjective spatial profile of the heterogeneous **transverse relaxation** process in the brain. Our results led us to propose that the use of chisquares **parameter** maps, together with the first- and higher-order relaxation **parameter** maps, may further improve the in vivo **tissue** characterization capability of **MRI** in future clinical diagnosis and staging of intracranial diseases.

13/7/6 (Item 2 from file: 73)
DIALOG(R)File 73:EMBASE

04439749 EMBASE No: 1990327858

Fast and precise Tinf 1 imaging **using a TOMROP sequence**

Brix G.; Schad L.R.; Deimling M.; Lorenz W.J.
Institute of Radiology and Pathophysiology, German Cancer Research Center, D-6900 Heidelberg Germany

Magnetic Resonance Imaging (MAGN. RESON. IMAGING) (United States) 1990 , 8/4 (351-356)
CODEN: MRIMD ISSN: 0730-725X
DOCUMENT TYPE: Journal; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

Proton spin-lattice (Tinf 1) relaxation time images were computed from a data set of 32 gradient-echo images acquired with a fast TOMROP (T One by Multiple Read Out Pulses) sequence using a standard whole-body **MR** imager operating at 64 MHz. The data acquisition and analysis method which permits accurate **pixel** -by- **pixel** estimation of Tinf 1 relaxation times is described. As an example, the Tinf 1 **parameter** image of a human brain is shown demonstrating an excellent image quality. For white and gray brain matter, the measured **longitudinal relaxation** processes are adequately described by a single-component least-squares fit, while more than one proton component has to be considered for fatty **tissue** . A quantitative analysis yielded Tinf 1 values of 547 +/- 36 msec and 944 +/- 73 msec for white and gray matter, respectively.
?

30/KWIC/1 (Item 1 from file: 2)

Title: Pharmacokinetic modeling of dynamic MR **images using a simulated annealing based optimization**

Abstract: The aim was to use dynamic contrast enhanced **MR** image (DEMRI) data to generate " **parameter** images" which provide functional information about contrast agent access, in bone sarcoma. A simulated annealing based technique was applied to optimize the **parameters** of a pharmacokinetic model used to describe the kinetics of the **tissue** response during and after intravenous infusion of a paramagnetic contrast medium, Gd-DTPA. Optimization was performed on a **pixel** by **pixel** basis so as to minimize the sum of square deviations of the calculated values from the values obtained experimentally during dynamic contrast enhanced **MR imaging** . A cost function based on a priori information was introduced during the annealing procedure to ensure that the values obtained were within the expected ranges. The optimized **parameters** were used in the model to generate **parameter** images, which reveal functional information that is normally not visible in conventional Gd-DTPA enhanced **MR** images. This functional information, during and upon completion of pre-operative chemotherapy, is useful in predicting the probability of disease free survival.

Descriptors: biomedical **MRI** ;
Identifiers: dynamic contrast enhanced **magnetic resonance** image data ...

... **parameter** images...

... **tissue** response...

... **pixel** by **pixel** basis
2000

30/KWIC/2 (Item 2 from file: 2)

Title: Multi-level adaptive segmentation of multi- parameter MR **brain images**

Abstract: Presents a novel model-based method for the automatic segmentation and classification of multi- **parameter MR** brain images into a larger number of **tissue** classes of interest. Our model employs 15 classes which were of clinical interest to neuroradiologists for following up patients suffering from cerebrovascular deficiency and/or stroke. The model approximates the spatial distribution of **tissue** classes by a Gauss-Markov random field and uses the maximum likelihood method to estimate the class probabilities and transitional probabilities for each pixel of the image. Multi- **parameter** images with T/sub 1/, T/sub 2/, proton density, Gd+T/sub 1/ and perfusion **imaging** were used in segmentation and classification. In the development of the segmentation model, the true class membership of measured **parameters** was determined from manual segmentation of a set of normal and pathologic brain images by a team of neuroradiologists. The manual segmentation was performed using a human-computer interface specifically designed for **pixel** -by- **pixel** segmentation of brain images. The registration of corresponding images from different brains was accomplished using an elastic transformation. The presented segmentation method uses the multi- **parameter** model in adaptive segmentation of brain images on a **pixel** -by- **pixel** basis. The method was

evaluated on a set of brain images of a 12-year old patient 48 hours after suffering a stroke. The results...

... manual segmentation of the same data show the efficacy and accuracy of the presented method as well as its capability to create and learn new **tissue** classes.
...Descriptors: biomedical **MRI** ;
...Identifiers: multi- **parameter** **MRI** ; ...

...brain **tissue** classes...

...T/sub 1/ **MRI** ; ...

...T/sub 2/ **MRI** ; ...

...Gd+T/sub 1/ **MRI** ; ...

...perfusion **imaging** ; ...

... **pixel** -by- **pixel** segmentation...

... **magnetic resonance imaging**
2000

30/KWIC/3 (Item 3 from file: 2)

Title: Intimate combination of low- and high-resolution image data. I. Real-Space PET and /sup 1/H/sub 2/O MRI **, PETAMRI**
Abstract: Two different types of (co-registered) images of the same slice of **tissue** will generally have different spatial resolutions. The judicious **pixel** -by- **pixel** combination of their data can be accomplished to yield a single image exhibiting **properties** of both. Here, axial /sup 18/FDG PET and /sup 1/H/sub 2/O **MR** images of the human brain are used as the low- and high-resolution members of the pair. A color scale is necessary in order to provide for separate intensity **parameters** from the two image types. However, not all color scales can accommodate this separability. The HSV color model allows one to choose a color scale...

... intensity of the low-resolution image type is coded as hue, while that of the high-resolution type is coded as value, a reasonably independent **parameter** . Furthermore, the high-resolution image must have high contrast and be quantitative in the same sense as the low resolution image almost always is. Here, relaxographic **MR** images (naturally segmented quantitative /sup 1/H/sub 2/O spin-density components) are used. Their essentially complete contrast serves to effect an apparent editing...

... images with gray-matter (GM) relaxographic /sup 1/H/sub 2/O images produces visually "GM-edited" /sup 18/FDG PETAMR (positron emission tomography and **magnetic resonance**) images. These exhibit the high sensitivity to tracer amounts **characteristic** of PET along with the high spatial resolution of /sup 1/H/sub 2/O **MRI** . At the same time, however, they retain the complete quantitative measures of each of their basis images.
Descriptors: biomedical **MRI** ;
...Identifiers: sup 1/H/sub 2/O **MRI** ; ...

... **tissue** slice...

John Sims EIC 3700 308-4836

... **pixel** -by- **pixel** combination...

...medical diagnostic **imaging** ;
1999

30/KWIC/4 (Item 4 from file: 2)

Title: A MRI **spatial mapping technique for microvascular permeability and** tissue **blood volume based on macromolecular contrast agent distribution**

Abstract: A rapid and automated method for two-dimensional spatial depiction (mapping) of quantitative physiological **tissue characteristics** derived from contrast enhanced **MR imaging** was developed and tested in disease models of cancer, inflammation, and myocardial reperfusion injury. Specifically, an established two-compartment kinetic model of unidirectional mass transport was implemented on a **pixel** -by- **pixel** basis to generate maps of **tissue** permeability surface area product (PS) and fractional blood volume (BV) based on dynamic **MRI** intensity data after administration of albumin-(Gd-DTPA)/sub 30/, a prototype macromolecular contrast medium (MMCM) designed for blood pool enhancement. Maps of PS and ...

... reperfusion injury clearly depicted zones of increased permeability (up to approximately 500 mu l/cc/h-compared to <25 mu l/cc/h in normal **tissues**). As revealed on PS maps, the rank ordering of studied permeability abnormalities was reperfusion injury>inflammation>tumors. A rapid, automated mapping technique derived from dynamic contrast-enhanced **MRI** data can be used to facilitate the identification and characterization of pathophysiologic abnormalities, specifically relative increases in blood volume and/or microvascular permeability.

Identifiers: **MRI** spatial mapping technique...

... **tissue** blood volume...

...quantitative physiological **tissue characteristics** ; ...

...normal **tissues** ;
1997

30/KWIC/5 (Item 5 from file: 2)

Title: In-vivo tissue **characterization of brain by synthetic** MR **proton relaxation and statistical chisquares** parameter **maps**

Abstract: Proton spin density (N(H))- and relaxation time (T1 and T2)-weighted **magnetic resonance** (**MR**) images at different anatomical sections and/or orientations of the brain are routinely used for clinical **MR** diagnosis of various types of intracranial disorders and injuries. However, numerical information pertaining to the relaxation behavior of water in the brain is very difficult to be extracted and quantified form these conventional **MR** images. Using Carr-Purcell-Meiboom-Gill spin echo **imaging** sequences, multiple raw **MR** images of human and animal brains with selected values of repetition and echo times were acquired using a clinical 1.5-Tesla **MR** scanner. Using a non-interactive nonlinear

regression algorithm, first-order (N(H), T1 and T2) and higher order (biexponential and distribution) T2 proton relaxation **parameter** maps, as well as a new set of statistical chi-square **parameter** maps of the brains were calculated from the raw **MR** images **pixel** -by- **pixel** . We propose that the use of calculated relaxation and chi-square maps may further improve the capability of **MRI** in clinical diagnosis and staging of intercranial disorders and injuries.
...Descriptors: proton **magnetic resonance** ;
Identifiers: in-vivo **tissue** characterization...
...synthetic proton relaxation **parameter** maps...

...statistical chi-square **parameter** maps...

...proton spin density-weighted **magnetic resonance** images...

...relaxation time-weighted **magnetic resonance** images...

...Carr-Purcell-Meiboom-Gill spin echo **imaging** sequences...
1995
? t s30/3/all

30/3/1 (Item 1 from file: 2)
DIALOG(R)File 2:INSPEC

6797900 INSPEC Abstract Number: A2001-03-8760I-036, B2001-02-7510N-035, C2001-02-7330-122
Title: Pharmacokinetic modeling of dynamic MR **images using a simulated annealing based optimization**
Author(s): Sawant, A.; Reece, J.H.; Reddick, W.E.
Author Affiliation: Sch. of Biomed. Eng., Tennessee Univ., Memphis, TN, USA
Journal: Proceedings of the SPIE - The International Society for Optical Engineering Conference Title: Proc. SPIE - Int. Soc. Opt. Eng. (USA) vol.3978 p.276-83
Publisher: SPIE-Int. Soc. Opt. Eng,
Publication Date: 2000 Country of Publication: USA
CODEN: PSISDG ISSN: 0277-786X
SICI: 0277-786X(2000)3978L.276:PMDI;1-8
Material Identity Number: C574-2000-164
U.S. Copyright Clearance Center Code: 0277-786X/2000/$15.00
Conference Title: Medical Imaging 2000: Physiology and Function from Multidimensional Images
Conference Sponsor: SPIE
Conference Date: 13-15 Feb. 2000 Conference Location: San Diego, CA, USA
Language: English
Subfile: A B C

30/3/2 (Item 2 from file: 2)
DIALOG(R)File 2:INSPEC

6577726 INSPEC Abstract Number: B2000-06-7510N-021, C2000-06-7330-106
Title: Multi-level adaptive segmentation of multi- parameter MR **brain images**
Author(s): Zavaljevski, A.; Dhawan, A.P.; Gaskil, M.; Ball, W.; Johnson, J.D.

Author Affiliation: Syst. Eng. Group, GE Med. Syst., Milwaukee, WI, USA
Journal: Computerized Medical Imaging and Graphics vol.24, no.2 p. 87-98
Publisher: Elsevier,
Publication Date: March-April 2000 Country of Publication: UK
CODEN: CMIGEY ISSN: 0895-6111
SICI: 0895-6111(200003/04)24:2L.87:MLAS;1-D
Material Identity Number: A482-2000-002
U.S. Copyright Clearance Center Code: 0895-6111/2000/$20.00
Language: English
Subfile: B C

30/3/3 (Item 3 from file: 2)
DIALOG(R)File 2:INSPEC

6355917 INSPEC Abstract Number: A1999-20-8760K-024, B1999-10-7510R-025, C1999-10-7330-373
Title: Intimate combination of low- and high-resolution image data. I. Real-Space PET and /sup 1/H/sub 2/O MRI **, PETAMRI**
Author(s): Sammi, M.K.; Felder, C.A.; Fowler, J.S.; Jing-Huei Lee; Levy, A.V.; Xin Li; Logan, J.; Palyka, I.; Rooney, W.D.; Volkow, N.D.; Wang, G.-J.; Springer, C.S., Jr.
Author Affiliation: Dept. of Chem., Brookhaven Nat. Lab., Upton, NY, USA
Journal: Magnetic Resonance in Medicine vol.42, no.2 p.345-60
Publisher: Wiley,
Publication Date: Aug. 1999 Country of Publication: USA
CODEN: MRMEEN ISSN: 0740-3194
SICI: 0740-3194(199908)42:2L.345:ICHR;1-H
Material Identity Number: K620-1999-010
U.S. Copyright Clearance Center Code: 0740-3194/99/$3.00
Language: English
Subfile: A B C

30/3/4 (Item 4 from file: 2)
DIALOG(R)File 2:INSPEC

5537705 INSPEC Abstract Number: A9709-8760I-020
Title: A MRI **spatial mapping technique for microvascular permeability and** tissue **blood volume based on macromolecular contrast agent distribution**
Author(s): Demsar, F.; Roberts, T.P.L.; Schwickert, H.C.; Shames, D.M.; van Dijke, C.F.; Mann, J.S.; Saeed, M.; Brasch, R.C.
Author Affiliation: Dept. of Radiol., California Univ., San Francisco, CA, USA
Journal: Magnetic Resonance in Medicine vol.37, no.2 p.236-42
Publisher: Williams & Wilkins,
Publication Date: Feb. 1997 Country of Publication: USA
CODEN: MRMEEN ISSN: 0740-3194
SICI: 0740-3194(199702)37:2L.236:SMTM;1-6
Material Identity Number: K620-97003
U.S. Copyright Clearance Center Code: 0740-3194/97/$3.00
Language: English
Subfile: A

30/3/5 (Item 5 from file: 2)
DIALOG(R)File 2:INSPEC
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5028550 INSPEC Abstract Number: A9518-8760I-032, B9510-7510B-095, C9510-7330-092
Title: In-vivo tissue **characterization of brain by synthetic** MR **proton relaxation and statistical chisquares** parameter **maps**
Author(s): Kwan Hon Cheng; Hazle, J.D.; Jackson, E.; Price, R.; Kian Ang, K.
Author Affiliation: Texas Tech. Univ., Lubbock, TX, USA
Conference Title: Proceedings of the Eighth IEEE Symposium on Computer-Based Medical Systems (Cat. No.95CB35813) p.338-45
Publisher: IEEE Comput. Soc. Press, Los Alamitos, CA, USA
Publication Date: 1995 Country of Publication: USA x+348 pp.
ISBN: 0 8186 7117 3
U.S. Copyright Clearance Center Code: 1063-7125/95/$4.00
Conference Title: Proceedings Eighth IEEE Symposium on Computer-Based Medical Systems
Conference Sponsor: IEEE Comput. Soc. Tech. Committee on Comput. Med.; IEEE South Plains Sect.; SPIE - Int. Soc. Opt. Eng.; Texas Tech Univ.; Texas Tech Univ. Health Sci. Center
Conference Date: 9-10 June 1995 Conference Location: Lubbock, TX, USA
Language: English
Subfile: A B C
Copyright 1995, IEE

30/3/6 (Item 6 from file: 2)
DIALOG(R)File 2:INSPEC
(c) 2004 Institution of Electrical Engineers. All rts. reserv.

4819743 INSPEC Abstract Number: A9424-8760G-038
Title: Magnetic resonance imaging **of intravoxel incoherent motions with diffusion weighted gradient pulse sequence**
Author(s): Yu, B.C.; Jr-Yuan Chiou; Jyh-Wen Tsai
Author Affiliation: Coll. of Gen. Studies, Boston Univ., MA, USA
Journal: Chinese Journal of Medical and Biological Engineering vol.14, no.1 p.13-24
Publication Date: March 1994 Country of Publication: Taiwan
CODEN: ZYGXE4 ISSN: 1019-0465
SICI: 1019-0465(199403)14:1L.13:MRII;1-7
Material Identity Number: C310-94005
Language: Chinese
Subfile: A

30/3/7 (Item 7 from file: 2)
DIALOG(R)File 2:INSPEC
(c) 2004 Institution of Electrical Engineers. All rts. reserv.

04017239 INSPEC Abstract Number: A91145546, B91080163, C91073989
Title: Mapping between MR **brain images and a voxel model**
Author(s): Zhengping, J.; Mowforth, P.H.
Author Affiliation: Turing Inst., Glasgow, UK
Journal: Medical Informatics vol.16, no.2 p.183-93
Publication Date: April-June 1991 Country of Publication: UK
CODEN: MINFDZ ISSN: 0307-7640
U.S. Copyright Clearance Center Code: 0307-7640/91/$3.00
Language: English

John Sims EIC 3700 308-4836

Subfile: A B C

30/3/8 (Item 8 from file: 2)
DIALOG(R)File 2:INSPEC

02838432 INSPEC Abstract Number: A87040245
Title: A new pulse sequence for determining T/sub 1/ and T/sub 2/ simultaneously
Author(s): Graumann, R.; Fischer, H.; Oppelt, A.
Author Affiliation: Siemens AG, Erlangen, West Germany
Journal: Medical Physics vol.13, no.5 p.644-7
Publication Date: Sept.-Oct. 1986 Country of Publication: USA
CODEN: MPHYA6 ISSN: 0094-2405
U.S. Copyright Clearance Center Code: 0094-2405/86/050644-04$01.20
Language: English
Subfile: A

30/3/9 (Item 1 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

0012290766 BIOSIS NO.: 200000009079
Intimate combination of low- and high-resolution image data: I. Real-space PET and 1H2O MRI **, PETAMRI**
AUTHOR: Sammi Manoj K; Felder Christoph A; Fowler Joanna S; Lee Jing-Huei; Levy Alejandro V; Li Xin; Logan Jean; Palyka Ildiko; Rooney William D; Volkow Nora D; Wang Gene-Jack; Springer Charles S Jr (Reprint)
AUTHOR ADDRESS: Chemistry Department, Brookhaven National Laboratory, Upton, NY, 11973, USA**USA
JOURNAL: Magnetic Resonance in Medicine 42 (2): p345-360 Aug., 1999 **1999**
MEDIUM: print
ISSN: 0740-3194
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

30/3/10 (Item 2 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

0012005051 BIOSIS NO.: 199900264711
Robustness of anatomically guided pixel **-by-** pixel **algorithms for partial volume effect correction in positron emission tomography**
AUTHOR: Strul Daniel (Reprint); Bendriem Bernard
AUTHOR ADDRESS: Clinical PET Centre, St. Thomas' Hospital, Lambeth Palace Road, Lower Ground Floor, Lambeth Wing, London, SE1 7EH, UK**UK
JOURNAL: Journal of Cerebral Blood Flow and Metabolism 19 (5): p547-559 May, 1999 **1999**
MEDIUM: print
ISSN: 0271-678X
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

30/3/11 (Item 3 from file: 5)

DIALOG(R)File 5:Biosis Previews(R)

0010740533 BIOSIS NO.: 199799374593
Mapping abnormal synovial vascular permeability in temporomandibular joint arthritis in the rabbit using MRI
AUTHOR: Demsar F (Reprint); Van Dijke C F; Kirk B A; Kapila S; Peterfy C G; Roberts T P L; Shames D M; Tomazic S; Mann J; Brasch R C
AUTHOR ADDRESS: Jozaef Stefan Inst., Jamova 39, 61000 Ljubijana, Slovenia** Slovenia
JOURNAL: British Journal of Rheumatology 35 (SUPPL. 3): p23-25 1996 **1996**
ISSN: 0263-7103
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

30/3/12 (Item 4 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

0010375216 BIOSIS NO.: 199699009276
Measurement of cerebral blood volume via the relaxing effect of low-dose gadopentetate dimeglumine during bolus transit
AUTHOR: Hacklaender Thomas (Reprint); Reichenbach Juergen R; Hofer Matthias ; Moedder Ulrich
AUTHOR ADDRESS: Dep. Diagnostic Radiol., Heinrich-Heine-Univ., Moorenstr. 5, D-400225 Duesseldorf, Germany**Germany
JOURNAL: AJNR 17 (5): p821-830 1996 **1996**
ISSN: 0195-6108
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

30/3/13 (Item 5 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

0010219769 BIOSIS NO.: 199698687602
Pelvic lesions in patients with treated cervical carcinoma: Efficacy of pharmacokinetic analysis of dynamic MR **images in distinguishing recurrent tumors from benign conditions**
AUTHOR: Hawighorst Hans (Reprint); Kanpstein Paul G; Schaeffer Uwe; Knopp Michael V; Brix Gunnar; Zuna Ulf Vv Hoffmannan; Essig Marco; Van Kaick Gerhard
AUTHOR ADDRESS: Dep. Radiological Diagnosis Therapy, German Cancer Res. Cent., Im Neuenheimer Feld 280, D69120 Heidelberg, Germany**Germany
JOURNAL: AJR American Journal of Roentgenology 166 (2): p401-408 1996 **1996**
ISSN: 0361-803X
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

30/3/14 (Item 6 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

0007832101 BIOSIS NO.: 199192077872
PHARMACOKINETIC PARAMETERS **IN CNS GADOLINIUM DTPA ENHANCED** MR IMAGING
AUTHOR: BRIX G (Reprint); SEMMLER W; PORT R; SCHAD L R; LAYER G; LORENZ W J
AUTHOR ADDRESS: INST RADIOLOGIE PATHOPHYSIOLOGIE, DEUTSCHES KREBSFORSCHUNGSZENTRUM, POSTFACH 101949, W-6900 HEIDELBERG, GERMANY** GERMANY
JOURNAL: Journal of Computer Assisted Tomography 15 (4): p621-628 **1991**
ISSN: 0363-8715
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

30/3/15 (Item 7 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

0005538008 BIOSIS NO.: 198783016899
A NEW PULSE SEQUENCE FOR DETERMINING SPIN-LATTICE RELAXATION TIME AND SPIN-SPIN RELAXATION TIME SIMULTANEOUSLY
AUTHOR: GRAUMANN R (Reprint); FISCHER H; OPPELT A
AUTHOR ADDRESS: MEDICAL ENG GROUP, SIEMENS AG, 8520 ERLANGEN, W GER**WEST GERMANY
JOURNAL: Medical Physics (Woodbury) 13 (5): p644-647 **1986**
ISSN: 0094-2405
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

30/3/16 (Item 8 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

0005179854 BIOSIS NO.: 198682026241
MAGNETIC RESONANCE IMAGING **OF EXPERIMENTAL CEREBRAL ISCHEMIA CORRELATIONS BETWEEN NMR** PARAMETERS **AND WATER CONTENT**
AUTHOR: KATO H (Reprint); KOGURE K; OHTOMO H; IZUMIYAMA M; TOBITA M; MATSUI S; YAMAMOTO E; KOHNO H; IKEBE Y; WATANABE T
AUTHOR ADDRESS: DEPARTMENT NEUROLOGY, INSTITUTE BRAIN DISEASES, TOHOKU UNIVERSITY SCHOOL MEDICINE, 1-1 SEIRYO-MACHI, SENDAI 980, JAPAN**JAPAN
JOURNAL: Brain and Nerve (Tokyo) 38 (3): p295-302 **1986**
ISSN: 0006-8969
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: JAPANESE

30/3/17 (Item 1 from file: 6)
DIALOG(R)File 6:NTIS

1224855 NTIS Accession Number: DE86780183
Some Exercises in Quantitative NMR Imaging
(Proefschrift (Dr.))
Bakker, C. J. G.
Utrecht Rijksuniversiteit (Netherlands).
Corp. Source Codes: 019965000; 5526800
Report No.: INIS-MF-9970
5 Mar 85 97p

John Sims EIC 3700 308-4836

Languages: English Document Type: Thesis
Journal Announcement: GRAI8608
Includes summaries in Dutch, French and German; 77 refs.; 38 figs.; 8 tabs.
U.S. Sales Only. Order this product from NTIS by: phone at 1-800-553-NTIS (U.S. customers); (703)605-6000 (other countries); fax at (703)321-8547; and email at orders@ntis.fedworld.gov. NTIS is located at 5285 Port Royal Road, Springfield, VA, 22161, USA.
NTIS Prices: PC A05/MF A01

30/3/18 (Item 1 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

04246661 E.I. No: EIP95092847394
Title: In-vivo tissue **characterization of brain by synthetic** MR **proton relaxation and statistical chisquares** parameter **maps**
Author: Cheng, Kwan Hon; Hazle, John D.; Jackson, Edward; Price, Roger; Ang, K. Kian
Corporate Source: Texas Tech Univ, Lubbock, TX, USA
Conference Title: Proceedings of the 8th IEEE Symposium on Computer-Based Medical Systems
Conference Location: Lubbock, TX, USA Conference Date: 19950609-19950610
E.I. Conference No.: 43511
Source: IEEE Symposium on Computer-Based Medical Systems 1995. IEEE, Los Alamitos, CA, USA,95CH35813. p 338-345
Publication Year: 1995
CODEN: PSCSFM ISSN: 1063-7125
Language: English

30/3/19 (Item 2 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

04174922 E.I. No: EIP95052723720
Title: Brain image analysis by using sensor-array-signal processing technique
Author: Lei, Tianhu; Sewchand, Wilfred
Corporate Source: Univ of Maryland, Baltimore, MD, USA
Conference Title: Proceedings of the 16th Annual International Conference of the IEEE Engineering in Medicine and Biology Society. Part 1 (of 2)
Conference Location: Baltimore, MD, USA Conference Date: 19941103-19941106
E.I. Conference No.: 43037
Source: Annual International Conference of the IEEE Engineering in Medicine and Biology Society - Proceedings v 16 n pt 1 1994. IEEE, Piscataway, NJ, USA,94CH3474-4. p 712-713
Publication Year: 1994
CODEN: CEMBAD ISSN: 0589-1019
Language: English

30/3/20 (Item 3 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

02618663 E.I. Monthly No: EI8808070441
Title: MULTISPECTRAL MAGNETIC RESONANCE **IMAGE ANALYSIS.**

Author: Vannier, Michael W.; Butterfield, Robert L.; Rickman, Douglas L.; Jordan, Douglas M.; Murphy, William A.; Biondetti, Pietro R.
Corporate Source: Washington Univ Sch of Medicine, St. Louis, MO, USA
Source: CRC Critical Reviews in Biomedical Engineering v 15 n 2 1987 p 117-144
Publication Year: 1987
CODEN: CRBEDR ISSN: 0278-940X
Language: English

30/3/21 (Item 1 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

10027701 Genuine Article#: 477QK No. References: 30
Title: Pixel analysis of MR **perfusion** imaging **in predicting radiation therapy outcome in cervical cancer**
Author(s): Mayr NA (REPRINT) ; Yuh WTC; Arnholt JC; Ehrhardt JC; Sorosky JI ; Magnotta VA; Berbaum KS; Zhen WN; Paulino AC; Oberley LW; Sood AK; Buatti JM
Corporate Source: Univ Iowa,Coll Med, Dept Radiol, Div Radiat Oncol,200 Hawkins Dr/Iowa City//IA/52242 (REPRINT); Univ Iowa,Coll Med, Dept Radiol, Div Radiat Oncol,Iowa City//IA/52242
Journal: JOURNAL OF MAGNETIC RESONANCE IMAGING, **2000** , V12, N6 (DEC), P 1027-1033
ISSN: 1053-1807 Publication date: 20001200
Publisher: JOHN WILEY & SONS INC, 605 THIRD AVE, NEW YORK, NY 10158-0012 USA
Language: English Document Type: ARTICLE (ABSTRACT AVAILABLE)

30/3/22 (Item 2 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

07662168 Genuine Article#: 193NW No. References: 50
Title: A new method for imaging **perfusion and contrast extraction fraction: Input functions derived from reference** tissues
Author(s): Kovar DA; Lewis M; Karczmar GS (REPRINT)
Corporate Source: UNIV CHICAGO,MED CTR, DEPT RADIOL, MC2026/CHICAGO//IL/60637 (REPRINT); UNIV CHICAGO,MED CTR, DEPT RADIOL/CHICAGO//IL/60637
Journal: JMRI-JOURNAL OF MAGNETIC RESONANCE IMAGING, **1998** , V8, N5 (SEP-OCT), P1126-1134
ISSN: 1053-1807 Publication date: 19980900
Publisher: JOHN WILEY & SONS INC, 605 THIRD AVE, NEW YORK, NY 10158-0012
Language: English Document Type: ARTICLE (ABSTRACT AVAILABLE)

30/3/23 (Item 3 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

06258279 Genuine Article#: YE887 No. References: 25
Title: An automated method for mapping human tissue **permittivities by** MRI **in hyperthermia treatment planning**
Author(s): Farace P; Pontalti R; Cristoforetti L; Antolini R; Scarpa M (REPRINT)
Corporate Source: UNIV TRENT,DIPARTIMENTO FIS, VIA SOMMARIVE 14/I-38050 POVO//ITALY/ (REPRINT); UNIV TRENT,DIPARTIMENTO FIS/I-38050

John Sims EIC 3700 308-4836

POVO//ITALY/; UNIV TRENT,INFM/I-38050 POVO//ITALY/; CTR MAT & BIOFIS MED,ITC/I-38050 POVO//ITALY/
Journal: PHYSICS IN MEDICINE AND BIOLOGY, **1997** , V42, N11 (NOV), P 2159-2174
ISSN: 0031-9155 Publication date: 19971100
Publisher: IOP PUBLISHING LTD, DIRAC HOUSE, TEMPLE BACK, BRISTOL, ENGLAND BS1 6BE
Language: English Document Type: ARTICLE (ABSTRACT AVAILABLE)

30/3/24 (Item 4 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

05280471 Genuine Article#: VM424 No. References: 24
Title: SENSITIVITY OF HIGH-SPEED PERFUSION-SENSITIVE MAGNETIC - RESONANCE - IMAGING **TO MILD CEREBRAL-ISCHEMIA**
Author(s): ROBERTS TPL; VEXLER ZS; VEXLER V; DERUGIN N; KUCHARCZYK J
Corporate Source: UNIV CALIF SAN FRANCISCO,DEPT RADIOL,NEURORADIOL SECT,BOX 0628,513 PARNASSUS AVE/SAN FRANCISCO//CA/94143
Journal: EUROPEAN RADIOLOGY, **1996** , V6, N5, P645-649
ISSN: 0938-7994
Language: ENGLISH Document Type: ARTICLE (Abstract Available)

30/3/25 (Item 5 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

01612341 Genuine Article#: HL174 No. References: 18
Title: MR IMAGING **OF CEREBRAL BLOOD-FLOW - BASIC PRINCIPLES AND PRELIMINARY CLINICAL-EXPERIENCE WITH T2-ASTERISK-WEIGHTED GRADIENT ECHO IMAGES AND BOLUS APPLICATION OF CONTRAST-MEDIUM**
Author(s): GUCKEL F; WENTZ KU; BRIX G; JASCHKE W; ROTHER J; LOOSE R; DEIMLING M; GEORGI M
Corporate Source: KLINIKUM MANNHEIM,INST KLIN RADIOL,THEODOR KUTZER UFER/W-6800 MANNHEIM 1//GERMANY/; GERMAN CANC RES CTR/W-6900 HEIDELBERG 1//GERMANY/; NEUROL CLIN/MANNHEIM//GERMANY/; SIEMENS AG/W-8520 ERLANGEN//GERMANY/
Journal: FORTSCHRITTE AUF DEM GEBIETE DER RONTGENSTRAHLEN UND DER NEUEN BILDGEBENDEN VERFAHREN, **1992** , V156, N3 (MAR), P212-217
Language: GERMAN Document Type: ARTICLE (Abstract Available)

30/3/26 (Item 6 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

01104624 Genuine Article#: FW322 No. References: 28
Title: PHARMACOKINETIC PARAMETERS **IN CNS GD-DTPA ENHANCED** MR IMAGING
Author(s): BRIX G; SEMMLER W; PORT R; SCHAD LR; LAYER G; LORENZ WJ
Corporate Source: DEUTSCH KREBSFORSCHUNGSZENTRUM,INST RADIOL & PATHOPHYSIOL,POSTFACH 101949/D-6900 HEIDELBERG//FED REP GER/
Journal: JOURNAL OF COMPUTER ASSISTED TOMOGRAPHY, **1991** , V15, N4, P621-628
Language: ENGLISH Document Type: ARTICLE (Abstract Available)

30/3/27 (Item 1 from file: 73)
DIALOG(R)File 73:EMBASE

07789455 EMBASE No: 1999272407
Intimate combination of low- and high-resolution image data: I. Real-space PET and sup 1Hinf 20 MRI , PETAMRI
Sammi M.K.; Felder C.A.; Fowler J.S.; Lee J.-H.; Levy A.V.; Li X.; Logan J.; Palyka I.; Rooney W.D.; Volkow N.D.; Wang G.-J.; Springer C.S. Jr.
Dr. C.S. Springer Jr., Chemistry Department, Brookhaven National Laboratory, Upton, NY 11973 United States
Magnetic Resonance in Medicine (MAGN. RESON. MED.) (United States) 1999, 42/2 (345-360)
CODEN: MRMEE ISSN: 0740-3194
DOCUMENT TYPE: Journal; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH
NUMBER OF REFERENCES: 42

30/3/28 (Item 2 from file: 73)
DIALOG(R)File 73:EMBASE

07188042 EMBASE No: 1998080303
Primary breast abnormalities: Selective pixel sampling on dynamic gadolinium enhanced MR images
Mussurakis S.; Gibbs P.; Horsman A.
Dr. S. Mussurakis, Athenas 2, Heraklion, Crete GR71306 Greece
Radiology (RADIOLOGY) (United States) 1998, 206/2 (465-473)
CODEN: RADLA ISSN: 0033-8419
DOCUMENT TYPE: Journal; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH
NUMBER OF REFERENCES: 32

30/3/29 (Item 3 from file: 73)
DIALOG(R)File 73:EMBASE

06946747 EMBASE No: 1997231264
Dynamic MR imaging of the breast combined with analysis of contrast agent kinetics in the differentiation of primary breast tumours
Mussurakis S.; Buckley D.L.; Drew P.J.; Fox J.N.; Carleton P.J.; Turnbull L.W.; Horsman A.
Dr. S. Mussurakis, Centre for MR Investigations, Hull Royal Infirmary, Anlaby Road, Hull HU3 2JZ United Kingdom
Clinical Radiology (CLIN. RADIOL.) (United Kingdom) 1997, 52/7 (516-526)
CODEN: CLRAA ISSN: 0009-9260
DOCUMENT TYPE: Journal; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH
NUMBER OF REFERENCES: 35

30/3/30 (Item 4 from file: 73)
DIALOG(R)File 73:EMBASE

06481559 EMBASE No: 1996148386
MRI **mapping of microvascular permeability and** tissue **blood volume**
Demsar F.; Roberts T.P.L.; Schwickert H.C.; Shames D.M.; Mann J.S.; Tomazic S.; Brasch R.C.
Department of Radiology, University of California,San Francisco, CA

United States
Pflugers Archiv European Journal of Physiology (PFLUG. ARCH. EUR. J. PHYSIOL.) (Germany) 1996, 431/6 SUPPL. 2 (R263-R264)
CODEN: PFLAB ISSN: 0031-6768
DOCUMENT TYPE: Journal; Conference Paper
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

30/3/31 (Item 5 from file: 73)
DIALOG(R)File 73:EMBASE

03327413 EMBASE No: 1987079990
The value of relaxation times and density measurements in clinical MRI
Crooks L.E.; Hylton N.M.; Ortendahl D.A.; et al.
Radiologic Imaging Laboratory, University of California, San Fransisco, South San Francisco, CA 94080 United States
Investigative Radiology (INVEST. RADIOL.) (United States) 1987, 22/2 (158-169)
CODEN: INVRA
DOCUMENT TYPE: Journal
LANGUAGE: ENGLISH

30/3/32 (Item 1 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

07336014 92199124 PMID: 1550915
MR **tomographic studies of the cerebral circulation: the methodological principles and initial clinical experiences with T2*-weighted gradient-echo sequences and CM administration as a bolus]**
MR -tomographische Untersuchungen zur zerebralen Durchblutung: methodische Grundlagen und erste klinische Erfahrungen mit T2*-gewichteten Gradientenecho-Sequenzen und KM-Gabe im Bolus.
Guckel F; Wentz K U; Brix G; Jaschke W; Rother J; Loose R; Deimling M; Georgi M
Institut fur Klinische Radiologie, Klinikum Mannheim.
RoFo. Fortschritte auf dem Gebiete der Rontgenstrahlen und der neuen bildgebenden Verfahren (GERMANY) Mar **1992** , 156 (3) p212-7, ISSN 1438-9029 Journal Code: 9112114
Document type: Journal Article ; English Abstract
Languages: GERMAN
Main Citation Owner: NLM
Record type: Completed
?

13/7/1 (Item 1 from file: 2)
DIALOG(R)File 2:INSPEC

6600095 INSPEC Abstract Number: A2000-13-8760I-008, B2000-07-7510N-009, C2000-07-7330-005
Title: Evaluation of water content by spatially resolved transverse relaxation **times of human articular** cartilage
Author(s): Lusse, S.; Claassen, H.; Gehrke, T.; Hassenpflug, J.; Schunke, M.; Heller, M.; Gluier, C.-C.
Author Affiliation: Dept. of Diagnostic Radiol., Kiel Univ., Germany
Journal: Magnetic Resonance Imaging vol.18, no.4 p.423-30
Publisher: Elsevier,
Publication Date: May 2000 Country of Publication: USA
CODEN: MRIMDQ ISSN: 0730-725X
SICI: 0730-725X(200005)18:4L.423:EWCS;1-Y
Material Identity Number: F149-2000-004
U.S. Copyright Clearance Center Code: 0730-725X/2000/$20.00
Language: English Document Type: Journal Paper (JP)
Treatment: Experimental (X)
Abstract: Non-invasive assessment of **cartilage properties** , specifically water content, could prove helpful in the diagnosis of early degenerative joint diseases. **Transverse relaxation** times T/sub 2/ of human articular **cartilage** (34 **cartilage** slices of three donors) were measured on a **pixel** -by- **pixel** basis in a clinical whole body **MR** system in vitro. In vivo feasibility to measure quantitative T/sub 2/ maps was shown for human patellar **cartilage** . The relaxation times of **cartilage** with collagen in the radial zone oriented perpendicular to the magnetic field increased from approximately 10 ms near the bone to approximately 60 ms near the articular surface. **Cartilage** water content of the tibial plateau and femoral condyles could be determined from the correlation with T/sub 2/(R/sup 2/=0.71) with an error of approximately 2 wt.%. In vivo, directional variation would need to be considered. If confirmed in vivo, T/sub 2/ measurements could potentially serve as a non-invasive tool for the evaluation of the status and distribution of water content in articular **cartilage** . (19 Refs)
Subfile: A B C

13/7/2 (Item 2 from file: 2)
DIALOG(R)File 2:INSPEC

4802136 INSPEC Abstract Number: A9423-8760G-015
Title: In vivo tissue **characterization of human brain by chisquares** parameter **maps: multiparameter proton T/sub 2/-relaxation analysis**
Author(s): Kwan Hon Cheng
Author Affiliation: Dept. of Phys., Texas Tech. Univ., Lubbock, TX, USA
Journal: Magnetic Resonance Imaging vol.12, no.7 p.1099-109
Publication Date: 1994 Country of Publication: UK
CODEN: MRIMDQ ISSN: 0730-725X
U.S. Copyright Clearance Center Code: 0730-725X/94/$6.00+.00
Language: English Document Type: Journal Paper (JP)
Treatment: Theoretical (T); Experimental (X)
Abstract: The heterogeneous proton **MR** relaxation decay process in human brain has been investigated by performing region-of-interest and **pixel** -by- **pixel** calculations on the multiecho **MR** images with different repetition times (TR) of human brains using a clinical 1.5-T whole-body superconducting **MR** scanner. Based on the monoexponential, biexponential,

and continuous Gaussian distribution relaxation models, first-order proton relaxation **parameters** (proton density, T/sub 1/ and T/sub 2/) and higher-order transverse proton relaxation **parameters** (T/sub 2/-long, T/sub 2/-short, T/sub 2/-long fraction, T/sub 2/-average, and T/sub 2/-distribution width) were calculated. On the basis of an F test (p<.01), the statistical significance of the higher-order (biexponential and distribution) fits over the monoexponential fit was evaluated. Here, a significant improvement in the biexponential fit was found for some of the regions containing the ventricular cerebrospinal fluid (CSF) (T/sub 2/-long=2780+or-570 ms; T/sub 2/-short=159+or-42 ms; T/sub 2/-long fraction=0.51+or-0.08 ms) due to the partial volume effect but not for most of the white matter (WM). On the other hand, an improvement of fit to WM was obtained when distribution (T/sub 2/-average=80+or-8 ms; T/sub 2/-distribution half-width=21+or-14 ms) as opposed to monoexponential (T/sub 2/=89+or-10 ms) fit was used. As internal controls, tubes of CuSO/sub 4/ solution (T/sub 2/=1293+or-128 ms) and agarose gel (T/sub 2/=111+or-10 ms) which have similar T/sub 2/ values as the CSF and WM of the brain, respectively, were attached to the human head and imaged concomitantly. No significance improvements in either the biexponential or distribution fits over the monoexponential fit were found for all the controls. In addition to the first-order and higher-order relaxation **parameter** maps, the monoexponential chisquares, as well as the chisquares ratio (chisquares of the monoexponential fit divided by that of the higher-order fit), maps were also generated. Unlike the higher-order T/sub 2/-relaxation **parameter** maps, the chisquares **parameter** maps required no selection of any predetermined statistical confidence level. Therefore, these chisquares **parameter** maps provided a somewhat nonsubjective spatial profile of the heterogeneous **transverse relaxation** process in the brain. The author's results led to the proposal that the use of chisquares **parameter** maps, together with the first-and higher-order relaxation **parameter** maps, may further improve the in vivo **tissue** characterization capability of **MRI** in future clinical diagnosis and staging of intracranial diseases. (17 Refs)
Subfile: A

13/7/3 (Item 3 from file: 2)
DIALOG(R)File 2:INSPEC

03766922 INSPEC Abstract Number: A91005805
Title: Fast and precise T/sub 1/ imaging using a TOMROP sequence
Author(s): Brix, G.; Schad, L.R.; Deimling, M.; Lorenz, W.J.
Author Affiliation: Inst. of Radiol. & Pathophysiol., Heidelberg, West Germany
Journal: Magnetic Resonance Imaging vol.8, no.4 p.351-6
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CODEN: MRIMDQ ISSN: 0730-725X
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Language: English Document Type: Journal Paper (JP)
Treatment: Experimental (X)
Abstract: Proton spin-lattice (T/sub 1/) relaxation time images were computed from a data set of 32 gradient-echo images acquired with a fast TOMROP (T One by Multiple Read Out Pulses) sequence using a standard whole-body **MR** imager operating at 64 MHz. The data acquisition and analysis method which permits accurate **pixel** -by- **pixel** estimation of T/sub 1/ relaxation times is described. As an example, the T/sub 1/ **parameter** image of a human brain is shown demonstrating an excellent image quality. For white and gray brain matter, the measured **longitudinal relaxation** processes are adequately described by a single-component

least-squares fit, while more than one proton component has to be considered for fatty **tissue** . A quantitative analysis yielded T/sub 1/ values of 547+or-36 msec and 944+or-73 msec for white and gray matter, respectively. (11 Refs)
Subfile: A

13/7/4 (Item 1 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

03584528 Genuine Article#: PJ063 Number of References: 0
(NO REFS KEYED)
Title: IN-VIVO TISSUE **CHARACTERIZATION OF HUMAN BRAIN BY CHISQUARES** PARAMETER **MAPS - MULTIPARAMETER PROTON T-2-RELAXATION ANALYSIS**
Author(s): CHENG KH
Corporate Source: TEXAS TECH UNIV,DEPT PHYS,BIOPHYS LAB,ROOM 108,SCI BLDG,BOX 41051/LUBBOCK//TX/79409
Journal: MAGNETIC RESONANCE IMAGING, 1994, V12, N7, P1099-1109
ISSN: 0730-725X
Language: ENGLISH Document Type: ARTICLE
Abstract: The heterogeneous proton **MR** relaxation decay process in human brain has been investigated by performing region-of-interest and **pixel** -by- **pixel** calculations on the multiecho **MR** images with different repetition times (TR) of human brains using a clinical 1.5-T whole-body superconducting **MR** scanner. Based on the monoexponential, biexponential, and continuous gaussian distribution relaxation models, first-order proton relaxation 1parameters (proton density, T-1 and T-2) and higher-order transverse proton relaxation **parameters** (T-2-long, T-2-short, T-2-long fraction, T-2-average, and T-2-distribution width) were calculated. On the basis of an F test ($p < .01$), the statistical significance of the higher-order (biexponential and distribution) fits over the monoexponential fit was evaluated. Here, a significant improvement in the biexponential fit was found for some of the regions containing the ventricular cerebrospinal fluid (CSF) (T-2-long = 2780 +/- 570 ms; T-2-short = 159 +/- 42 ms; T-2-long fraction = 0.51 +/- 0.08 ms) due to the partial volume effect but not for most of the white matter (WM). On the other hand, an improvement of fit to WM was obtained when distribution (T-2-average = 80 +/- 8 ms; T-2-distribution halfwidth = 21 +/- 4 ms) as opposed to monoexponential (T-2 = 89 +/- 10 ms) fit was used. As internal controls, tubes of CuSO4 solution (T-2 = 1293 +/- 128 ms) and agarose gel (T-2 = 111 +/- 10 ms) which have similar T-2 values as the CSF and WM of the brain, respectively, were attached to the human head and imaged concomitantly. No significance improvements in either the biexponential or distribution fits over the monoexponential fit were found for all the controls. In addition to the first-order and higher-order relaxation **parameter** maps, the monoexponential chisquares, as well as the chisquares ratio (chisquares of the monoexponential fit divided by that of the higher-order fit), maps were also generated. Unlike the higher-order T-2-relaxation **parameter** maps, the chisquares **parameter** maps required no selection of any predetermined statistical confidence level. Therefore, these chisquares **parameter** maps provided a somewhat nonsubjective spatial profile of the heterogeneous **transverse relaxation** process in the brain. Our results led us to propose that the use of chisquares **parameter** maps, together with the first- and higher-order relaxation **parameter** maps, may further improve the in vivo **tissue** characterization capability of **MRI** in future clinical diagnosis and staging of intracranial diseases.

13/7/5 (Item 1 from file: 73)
DIALOG(R)File 73:EMBASE

05890885 EMBASE No: 1994299622
In vivo tissue **characterization of human brain by chisquares** parameter **maps: Multiparameter proton Tinf 2-relaxation analysis**
Kwan Hon Cheng
Biophysics Laboratory, Physics Department, Texas Tech University,Lubbock, TX 79409-1051 United States
Magnetic Resonance Imaging (MAGN. RESON. IMAGING) (United States) 1994, 12/7 (1099-1109)
CODEN: MRIMD ISSN: 0730-725X
DOCUMENT TYPE: Journal; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

The heterogeneous proton **MR** relaxation decay process in human brain has been investigated by performing region-of-interest and **pixel** -by- **pixel** calculations on the multiecho **MR** images with different repetition times (TR) of human brains using a clinical 1.5-T whole-body superconducting **MR** scanner. Based on the monoexponential, biexponential, and continuous gaussian distribution relaxation models, first-order proton relaxation **parameters** (proton density, Tinf 1 and Tinf 2) and higher-order transverse proton relaxation **parameters** (Tinf 2-long, Tinf 2-short, Tinf 2-long fraction, Tinf 2-average, and Tinf 2- distribution width) were calculated. On the basis of an F test ($p < .01$), the statistical significance of the higher-order (biexponential and distribution) fits over the monoexponential fit was evaluated. Here, a significant improvement in the biexponential fit was found for some of the regions containing the ventricular cerebrospinal fluid (CSF) (Tinf 2-long = 2780 +/- 570 ms; Tinf 2-short = 159 +/- 42 ms; Tinf 2-long fraction = 0.51 +/- 0.08 ms) due to the partial volume effect but not for most of the white matter (WM). On the other hand, an improvement of fit to WM was obtained when distribution (Tinf 2- average = 80 +/- 8 ms; Tinf 2-distribution half-width = 21 +/- 4 ms) as opposed to monoexponential (Tinf 2 = 89 +/- 10 ms) fit was used. As internal controls, tubes of CuSOinf 4 solution (Tinf 2 = 1293 +/- 128 ms) and agarose gel (Tinf 2 = 111 +/- 10 ms) which have similar Tinf 2 values as the CSF and WM of the brain, respectively, were attached to the human head and imaged concomitantly. No significance improvements in either the biexponential or distribution fits over the monoexponential fit were found for all the controls. In addition to the first-order and higher-order relaxation **parameter** maps, the monoexponential chisquares, as well as the chisquares ratio (chisquares of the monoexponential fit divided by that of the higher-order fit), maps were also generated. Unlike the higher-order Tinf 2-relaxation **parameter** maps, the chisquares **parameter** maps required no selection of any predetermined statistical confidence level. Therefore, these chisquares **parameter** maps provided a somewhat nonsubjective spatial profile of the heterogeneous **transverse relaxation** process in the brain. Our results led us to propose that the use of chisquares **parameter** maps, together with the first- and higher-order relaxation **parameter** maps, may further improve the in vivo **tissue** characterization capability of **MRI** in future clinical diagnosis and staging of intracranial diseases.

13/7/6 (Item 2 from file: 73)
DIALOG(R)File 73:EMBASE

04439749 EMBASE No: 1990327858

Fast and precise Tinf 1 imaging **using a TOMROP sequence**

Brix G.; Schad L.R.; Deimling M.; Lorenz W.J.
Institute of Radiology and Pathophysiology, German Cancer Research Center, D-6900 Heidelberg Germany

Magnetic Resonance Imaging (MAGN. RESON. IMAGING) (United States) 1990 , 8/4 (351-356)
CODEN: MRIMD ISSN: 0730-725X
DOCUMENT TYPE: Journal; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

Proton spin-lattice (Tinf 1) relaxation time images were computed from a data set of 32 gradient-echo images acquired with a fast TOMROP (T One by Multiple Read Out Pulses) sequence using a standard whole-body **MR** imager operating at 64 MHz. The data acquisition and analysis method which permits accurate **pixel** -by- **pixel** estimation of Tinf 1 relaxation times is described. As an example, the Tinf 1 **parameter** image of a human brain is shown demonstrating an excellent image quality. For white and gray brain matter, the measured **longitudinal relaxation** processes are adequately described by a single-component least-squares fit, while more than one proton component has to be considered for fatty **tissue** . A quantitative analysis yielded Tinf 1 values of 547 +/- 36 msec and 944 +/- 73 msec for white and gray matter, respectively.

19/7/1 (Item 1 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

09608148 Genuine Article#: 425WF Number of References: 37
Title: T2 mapping of rat patellar cartilage
Author(s): Watrin A; Ruaud JPB; Olivier PTA; Guingamp NC; Gonord PD; Netter PA (REPRINT) ; Blum AG; Guillot GM; Gillet PM; Loeuille DHJ
Corporate Source: Univ Nancy 1,Fac Med, CNRS, UMR 7561,Dept Pharmacol,Ave Rue Foret Haye,BP 184/F-54505 Vandoeuvre Nancy//France/ (REPRINT); Univ Nancy 1,Fac Med, CNRS, UMR 7561,Dept Pharmacol,F-54505 Vandoeuvre Nancy//France/; Univ Nancy 1,Fac Med, CNRS, UMR 7561,Dept Clin Rheumatol,F-54505 Vandoeuvre Nancy//France/; CNRS,ESA 8081, Dept Med Magnet Resonance Res U2R2M,Paris//France/
Journal: RADIOLOGY, 2001, V219, N2 (MAY), P395-402
ISSN: 0033-8419 Publication date: 20010500
Publisher: RADIOLOGICAL SOC NORTH AMER, 20TH AND NORTHAMPTON STS, EASTON, PA 18042 USA
Language: English Document Type: ARTICLE
Abstract: PURPOSE: To investigate the usefulness of **magnetic resonance** (**MR**) T2 mapping in characterizing the evolution of **cartilage** matrix content and thickness during the maturation and aging process.

MATERIALS AND METHODS: Patellae from four groups of rats aged 4 weeks, 8 weeks, 4 months, and more than 6 months ("old rats") were studied ex vivo with an 8.5-T microimager. T2 values were calculated on transverse rat patellar sections and displayed with a color scale (the T2 map) on a **pixel** -by- **pixel** basis. Biochemical and histologic studies were performed to evaluate the influence of proteoglycans and collagen contents on T2 values of the patellar **cartilage** .

RESULTS: On the T2 map, the maturation process until 10 weeks was characterized by a decrease in T2 values and in **cart**ilage thickness. The biochemical data revealed a global decrease in proteoglycans and a progressive global increase in collagen content, whereas the histologic study revealed subtle zonal variation in matrix constituents with depth. As aging progressed, the T? values were low, without important variations, whereas the global **cartilage** thickness decreased. The **cartilage** matrix became globally more fibrotic, especially in the deepest zone. Biochemical analysis revealed that collagen content was more determinant of **MR** signal intensity than was proteoglycans content during maturation and aging.

CONCLUSION: T2 mapping allows characterization of variations in **cartilage** matrix constituents and thickness.

19/7/2 (Item 1 from file: 73)
DIALOG(R)File 73:EMBASE

10529899 EMBASE No: 1999414495
Functional magnetic resonance **(fMR)** imaging **of a rat brain tumor model: Implications for evaluation of tumor microvasculature and therapeutic response**
Mazurchuk R.; Zhou R.; Straubinger R.M.; Chau R.I.; Grossman Z.
Dr. R. Mazurchuk, Dept. of Molec. and Cell. Biophysics, Roswell Park Cancer Institute, Elm and Carlton Streets, Buffalo, NY 14263 United States
AUTHOR EMAIL: maz@tachy.med.buffalo.edu

John Sims EIC 3700 308-4836

Magnetic Resonance Imaging (MAGN. RESON. IMAGING) (United States) 1999
, 17/4 (537-548)
CODEN: MRIMD ISSN: 0730-725X
PUBLISHER ITEM IDENTIFIER: S0730725X98002082
DOCUMENT TYPE: Journal; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH
NUMBER OF REFERENCES: 43

Functional **MR** (fMR) **imaging** techniques based on blood oxygenation level dependent (BOLD) effects were developed and applied to a rat brain tumor model to evaluate the potential utility of the method for characterizing tumor growth and regression following treatment. Rats bearing 9L brain tumors in situ were imaged during inhalation of room air and after administration of 100% oxygen + acetazolamide (ACZ) injected 15 mg/kg intravenously. **Pixel** -to- **pixel** fMR maps of normalized signal intensity change from baseline values were calculated from **Tinf 2** weighted spin echo (SE) images acquired pre- and post- oxygen + ACZ administration. Resultant fMR maps were then compared to gross histological sections obtained from corresponding anatomical regions. Regions containing viable tumor with increased cellular density and localized foci of necrotic tumor cells consistent with hypoxia were visualized in the fMR images as regions with decreased signal intensities, indicating diminished oxyhemoglobin concentration and blood flow as compared to normal brain. Histological regions having peritumor edema, caused by increased permeability of tumor vasculature, were visualized in the fMR images as areas with markedly increased signal intensities. These results suggest that fMR **imaging** techniques could be further developed for use as a non-invasive tool to assess changes in tumor oxygenation/hemodynamics, and to evaluate the pharmacologic effect of anti-neoplastic drugs.

19/7/3 (Item 2 from file: 73)
DIALOG(R)File 73:EMBASE

07567853 EMBASE No: 1999041079
Effect of a gadodiamide contrast agent on the reliability of brain tissue Tinf 1 **measurements**
Steen R.G.; Reddick W.E.; Ogg R.J.; Langston J.W.
Dr. R.G. Steen, St. Jude's Children's Res. Hospital, Department of Diagnostic Imaging, 332 N. Lauderdale, Memphis, TN 38105-2794 United States
Magnetic Resonance Imaging (MAGN. RESON. IMAGING) (United States) 1999
, 17/2 (229-235)
CODEN: MRIMD ISSN: 0730-725X
PUBLISHER ITEM IDENTIFIER: S0730725X98000940
DOCUMENT TYPE: Journal; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH
NUMBER OF REFERENCES: 22

To determine whether brain spin-lattice relaxation time (**Tinf 1**) can routinely be measured after contrast-agent injection, we measured **Tinf 1** by a precise and accurate inversion-recovery (PAIR) method in five brain tumor patients, before and again after contrast-agent injection. The **Tinf 1** in at least 20 regions of interest (ROIs) was measured in each patient, avoiding areas of contrast enhancement visible by conventional **MR imaging** . Contrast- agent injection reduced **Tinf 1** in 51 regions of interest in white matter by less than 1% (not significant), and in 50 regions of interest in gray matter by less than 2% ($p = 0.001$). **Pixel** -by- **pixel** plots demonstrate that **Tinf 1** is reduced substantially in

extra-parenchymal **tissues** , but not in brain **tissues** . Therefore, **Tinf** 1 mapping with the precise and accurate inversion-recovery method can routinely be done after contrast injection. Our results suggest that the precise and accurate inversion-recovery method is not sensitive to the **Tinf** 1 of blood in the presence of an intact blood-brain barrier, although a substantial **Tinf** 1 reduction does occur in the absence of a blood-brain barrier.

19/7/4 (Item 3 from file: 73)
DIALOG(R)File 73:EMBASE

07479088 EMBASE No: 1998404914
NMR imaging **of changes in vascular morphology due to tumor angiogenesis**
Dennie J.; Mandeville J.B.; Boxerman J.L.; Packard S.D.; Rosen B.R.; Weisskoff R.M.
Dr. B.R. Rosen, MGH-NMR Center, Building 149, 13th Street, Charlestown, MA 02129 United States
Magnetic Resonance in Medicine (MAGN. RESON. MED.) (United States) 1998, 40/6 (793-799)
CODEN: MRMEE ISSN: 0740-3194
DOCUMENT TYPE: Journal; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH
NUMBER OF REFERENCES: 37

Tumor-sprouted vessels are greater in both number and diameter in comparison to their healthy counterparts. A novel technique based on magnetic susceptibility contrast mechanisms that are sensitive to varying sizes of blood vessels is presented to measure differences between the relaxation rates (1/ **Tinf** 2 and 1/ **Tinf** 2 *) in a rat glioma model and normal cerebral cortex. DeltaR2 and DeltaR2*, the differences between relaxation rates precontrast and postcontrast agent injection, were measured for an intravascular equilibrium contrast agent (MION) at various echo times. Since DeltaR2*/DeltaR2 increases as vessel size increases, this ratio can be used as a measure of the average vessel size within an ROI or a voxel. The stability and longevity of the contrast agent within the vasculature were verified (n = 2 trials), and the ratio of DeltaR2*/DeltaR2 between the tumor and normal cortex was measured to be 1.9 +/- 0.2 (n = 4, echo time = 20 ms, and susceptibility difference (Deltachi) approx. eq. 10sup -sup 6). This ratio compared favorably to a predicted ratio determined using histologically determined vessel sizes and theoretical Monte Carlo modeling results (1.9 +/- 0.1). Maps of the ratio of DeltaR2*/DeltaR2 were also made on a **pixel** -by- **pixel** basis. These techniques support the hypothesis that susceptibility contrast **MRI** can provide useful quantitative metrics of in vivo tumor vascular morphology.

19/7/5 (Item 4 from file: 73)
DIALOG(R)File 73:EMBASE

06413142 EMBASE No: 1996076756
Criteria for analysis of multicomponent tissue Tinf 2 **relaxation data**
Graham S.J.; Stanchev P.L.; Bronskill M.J.
Imaging Research, Sunnybrook Health Science Centre, 2075 Bayview Avenue,Toronto, Ont. M4N 3M5 Canada
Magnetic Resonance in Medicine (MAGN. RESON. MED.) (United States) 1996, 35/3 (370-378)

CODEN: MRMEE ISSN: 0740-3194
DOCUMENT TYPE: Journal; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

Monte Carlo simulations were performed to determine whether the multicomponent **Tinf 2** distribution of **tissue** can be estimated accurately from **Tinf 2** decay data acquired in vivo. Simulated data were generated for white matter, fast twitch muscle, and breast **tissue** . The signal-to-noise ratio, number of data samples, and minimum echo time were varied from the experimental conditions currently achievable with **MRI** to those achievable for in vitro experiments. Data were fitted by a distribution of **Tinf 2** values using the T2NNLS algorithm, and statistics characterizing the estimated **Tinf 2** components were determined. Current **MRI** techniques were found to provide conditions insufficient for accurate multicomponent **Tinf 2** analysis on a **pixel** -by- **pixel** basis. However, volume localization methods that measure **Tinf** 2 decay from a large volume of interest have potential for this analysis. These results illustrate a general framework for development of new techniques to measure **Tinf 2** decay accurately in vivo.

19/7/6 (Item 5 from file: 73)
DIALOG(R)File 73:EMBASE

06193820 EMBASE No: 1995228797
Confirmation of target localization and dosimetry for 3D conformal radiotherapy treatment planning by MR imaging **of a ferrous sulfate gel head phantom**
Chan M.F.; Ayyangar K.M.
Department of Radiation Therapy, Medical College of Ohio,Toledo, OH 43699 United States
Medical Physics (MED. PHYS.) (United States) 1995, 22/7 (1171-1175)
CODEN: MPHYA ISSN: 0094-2405
DOCUMENT TYPE: Journal; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

A detailed methodology has been developed to verify the three-dimensional (3D) radiation dose mapping of conformal therapy radiation treatment planning by FeMRI dosimetry. A phantom that consisted of a human skull filled with a 1-mM solution of ferrous sulfate and 0.1-N sulfuric acid gelled with 7.5% (by weight) gelatin was employed. With a spherical target volume in the head phantom, five noncoplanar conformal beams were designed through the use of a 3D treatment planning system developed in-house. The phantom was irradiated with a 6-MV linear accelerator to a total dose of 25 Gy delivered to the periphery of the target volume. The phantom and a set of calibration vials were scanned simultaneously in a GE 1.5T **MR** imager with six different multiscan inversion-recovery pulse sequences. The values of **Tinf 1** were evaluated on a **pixel** -by- **pixel** basis through the use of custom-built software on a UNIX workstation and were converted to dose using calibration data. Comparisons of dose distributions between those measured by FeMRI and those calculated by 3D treatment planning show good agreement.

19/7/7 (Item 6 from file: 73)
DIALOG(R)File 73:EMBASE

04991300 EMBASE No: 1992131516

MR imaging **of cerebral blood flow: Basic principles and preliminary clinical experience with** Tinf 2 ***-weighted gradient echo images and bolus application of contrast medium**

MR -TOMOGRAPHISCHE UNTERSUCHUNGEN ZUR ZEREBRALEN DURCHBLUTUNG: METHODISCHE GRUNDLAGEN UND ERSTE KLINISCHE ERFAHRUNGEN MIT **Tinf 2** *-GEWICHTETEN GRADIENTENECHO-SEQUENZEN UND KM-GABE IM BOLUS

Guckel F.; Wentz K.U.; Brix G.; Jaschke W.; Rother J.; Loose R.; Deimling M.; Georgi M.

Germany

RoFo Fortschritte auf dem Gebiete der Rontgenstrahlen und der Neuen Bildgebenden Verfahren (ROFO FORTSCHR. GEB. RONTGENSTR. NEUEN BILDGEBENDEN VERFAHREN) (Germany) 1992, 156/3 (212-217)
CODEN: RFGVE ISSN: 0936-6652
DOCUMENT TYPE: Journal; Article
LANGUAGE: GERMAN SUMMARY LANGUAGE: ENGLISH; GERMAN

Paramagnetic contrast agents produce local magnetic field inhomogeneity when they pass through the cerebrovascular system. This effect can be monitored with **Tinf 2** *-weighted gradient echo images, which show transient signal loss, while a bolus of GdDTPA is passing through the brain **tissue** . This signal loss is correlated to the local cerebral **tissue** perfusion and the local cerebral blood volume. In a prospective study 10 volunteers and 14 patients with cerebral infarcts and brain tumours were examined. After bolus application of GdDTPA a dynamic series of rapid **Tinf 2** *-weighted gradient echo images were recorded, and the local dynamics of contrast flow in brain **tissue** was examined. From the series of images, local changes in signal intensity were calculated **pixel** by **pixel** and presented as parameter images. By this method, infarcted areas and brain tumours can be distinguished from normal **tissue** by their contrast flow dynamics. The abnormal contrast dynamics depend on changes in local **tissue** perfusion and alterations in local blood volume. The separation of the influence of both parameters however is still an unsolved problem.

19/7/8 (Item 7 from file: 73)
DIALOG(R)File 73:EMBASE

04742344 EMBASE No: 1991235698

A quantitative study of lumbar vertebral bone marrow using Tinf 1 **mapping and image analysis techniques: Methodology and preliminary results**

Roberts N.; Smith S.R.; Percy D.F.; Edwards R.H.T.
Magnetic Resonance Res. Ctr, University of Liverpool, PO Box 147,Liverpool L69 3BX United Kingdom

British Journal of Radiology (BR. J. RADIOL.) (United Kingdom) 1991, 64/764 (673-678)
CODEN: BJRAA ISSN: 0007-1285
DOCUMENT TYPE: Journal; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

A method of quantifying lumbar vertebral bone marrow using **pixel** by **pixel Tinf 1** mapping of spin echo **magnetic resonance** images is described. The accuracy and precision of the relaxation time measurements is confirmed by studies with the EEC Concerted Research Project, test object no. 5. The **Tinf 1** data from all the pixels sampled from lumbar vertebral marrow are displayed as a histogram. By "thresholding" relative to normal control data the spatial distribution of high or low **Tinf 1** pixels can be demonstrated. The approach is superior to that of the conventional region of interest method for quantifying and analysing relaxation time data, and allows **tissue** heterogeneity to be studied.

John Sims EIC 3700 308-4836

Studies in patients with aplastic anaemia and acute leukaemia have been performed.

19/7/9 (Item 8 from file: 73)
DIALOG(R)File 73:EMBASE

03040975 EMBASE No: 1985234491
Tinf 2 **-analysis of normal and pathological structures of the head**
Tinf 2 -ANALYSE NORMALER UND PATHOLOGISCHER STRUKTUREN DES KOPFES
Skalej M.; Higer H.P.; Meves M.; et al.
Arbeitsgrouppe NMR - Tomographie an der Deutschen Klinik fur Diagnostik, D-6200 Wiesbaden Germany
Digitale Bilddiagnostik (DIGIT. BILDDIAGN.) (Germany) 1985, 5/3 (112-119)
CODEN: DIBIE
DOCUMENT TYPE: Journal
LANGUAGE: GERMAN SUMMARY LANGUAGE: ENGLISH

Analyses of **Tinf 2** values (spin-spin relaxation time constant) in **magnetic resonance** tomography were carried out in 29 patients with brain tumours. 21 of these had tumours of the glioma group (17 astrocytomas WHO I-III and oligoastrocytomas, 4 glioblastomas). Measurements were effected both **pixel** by **pixel** and according to relevant ROI (regions of interest). Although the measurements yielded a **Tinf 2** value which was typical of the disease, it was individually difficult to effect proper grading on account of the scatter occurring from case to case. Markedly more relevant information was obtained by the introduction of profile measurements in **Tinf 2** images. The relation between **Tinf 2** profile and histology of the gliomas permits rough grading between more or less differentiated gliomas.

14/3/1 (Item 1 from file: 347)
DIALOG(R)File 347:JAPIO

05652095 **Image available**
MAGNETIC RESONANCE IMAGING METHOD AND DEVICE

PUB. NO.: 09-266895 [JP 9266895 A]
PUBLISHED: October 14, 1997 (19971014)
INVENTOR(s): MASUDA TOMONORI
APPLICANT(s): HITACHI MEDICAL CORP [420143] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 08-079728 [JP 9679728]
FILED: April 02, 1996 (19960402)

14/3/2 (Item 2 from file: 347)
DIALOG(R)File 347:JAPIO

04447017 **Image available**
MRI DEVICE

PUB. NO.: 06-090917 [JP 6090917 A]
PUBLISHED: April 05, 1994 (19940405)
INVENTOR(s): IKEZAKI YOSHIKAZU
APPLICANT(s): YOKOGAWA MEDICAL SYST LTD [485515] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 04-246678 [JP 92246678]
FILED: September 16, 1992 (19920916)
JOURNAL: Section: C, Section No. 1220, Vol. 18, No. 351, Pg. 150, July 04, 1994 (19940704)

14/3/3 (Item 3 from file: 347)
DIALOG(R)File 347:JAPIO

01775374
MEASUREMENT FOR BLOOD FLOW VELOCITY DISTRIBUTION

PUB. NO.: 60-253874 [JP 60253874 A]
PUBLISHED: December 14, 1985 (19851214)
INVENTOR(s): MORIWAKI MASAJI
UESHIMA YASUHIRO
TAKEDA JUNICHI
FUKUDA NOBUO
IKEHIRA HIROO
TATENO YUKIO
APPLICANT(s): ASAHI CHEM IND CO LTD [000003] (A Japanese Company or Corporation), JP (Japan)
FUKUDA NOBUO [000000] (An Individual), JP (Japan)
APPL. NO.: 59-110377 [JP 84110377]
FILED: May 30, 1984 (19840530)
JOURNAL: Section: P, Section No. 455, Vol. 10, No. 127, Pg. 163, May 13, 1986 (19860513)

14/3/7 (Item 4 from file: 350)
DIALOG(R)File 350:Derwent WPIX

013556769
WPI Acc No: 2001-040976/200105
XRAM Acc No: C01-011876
XRPX Acc No: N01-030555
Acquiring magnetic resonance **data from sample comprising applying radio frequency pulse to sample in magnetic field and analyzing at set time intervals**
Patent Assignee: UNIV COLUMBIA NEW YORK (UYCO)
Inventor: KATZ J; KLINE R P; WU E X
Number of Countries: 090 Number of Patents: 003
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200069336	A1	20001123	WO 2000US13186	A	20000512	200105	B
AU 200051330	A	20001205	AU 200051330	A	20000512	200113	
US 6681132	B1	20040120	US 99317068	A	19990513	200407	

Priority Applications (No Type Date): US 99317068 A 19990513
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200069336	A1	E	99	A61B-005/055	
	Designated States (National): AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW				
	Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ TZ UG ZW				
AU 200051330	A				Based on patent WO 200069336
US 6681132	B1			A61B-005/055	

14/3/8 (Item 5 from file: 350)
DIALOG(R)File 350:Derwent WPIX

010120785 **Image available**
WPI Acc No: 1995-022036/199503
XRPX Acc No: N95-017196
Nuclear magnetic resonance **inspection method - obtaining two data sets of NMR signals containing different phase distributions, reconstructing two complex multipixel image and dividing each** pixel **of first image by corresponding** pixel **of second image**
Patent Assignee: HITACHI LTD (HITA)
Inventor: ONODERA Y; SUZUKI R; YAMAMOTO E
Number of Countries: 002 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 5371465	A	19941206	US 92850589	A	19920313	199503	B
JP 3156857	B2	20010416	JP 91164265	A	19910704	200124	

Priority Applications (No Type Date): JP 91164265 A 19910704; JP 9147865 A 19910313
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 5371465	A		13	G01R-033/20	
JP 3156857	B2		6	A61B-005/055	Previous Publ. patent JP 5007569

14/3/9 (Item 6 from file: 350)
DIALOG(R)File 350:Derwent WPIX

009407648
WPI Acc No: 1993-101158/199312
XRPX Acc No: N93-076944
NMR tissue **parameter display with colour multiple** quantitive **images - overlaps images of different and independent chromatic scales by partitioning** pixel **bit depths and compression of parametric images**
Patent Assignee: CONSIGLIO NAZ DELLE RICERCHE (CNDR)
Inventor: ALFANO B
Number of Countries: 037 Number of Patents: 007
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 9305405	A1	19930318	WO 92IT112	A	19920909	199312	B
AU 9226457	A	19930405	AU 9226457	A	19920909	199330	
EP 603323	A1	19940629	EP 92920532	A	19920909	199425	
			WO 92IT112	A	19920909		
IT 1250094	B	19950330	IT 91RM680	A	19910912	199537	
US 5486763	A	19960123	WO 92IT112	A	19920909	199610	
			US 94204421	A	19940411		
EP 603323	B1	19960522	EP 92920532	A	19920909	199625	
			WO 92IT112	A	19920909		
DE 69211007	E	19960627	DE 611007	A	19920909	199631	
			EP 92920532	A	19920909		
			WO 92IT112	A	19920909		

Priority Applications (No Type Date): IT 91RM680 A 19910912
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 9305405	A1	E	12	G01R-033/28	
Designated States (National): AT AU BB BG BR CA CH CS DE DK ES FI GB HU JP KP KR LK LU MG MN MW NL NO PL RO RU SD SE US					
Designated States (Regional): AT BE CH DE DK ES FR GB GR IE IT LU MC NL OA SE					
AU 9226457	A			G01R-033/28	Based on patent WO 9305405
EP 603323	A1	E		G01R-033/28	Based on patent WO 9305405
Designated States (Regional): DE NL					
US 5486763	A		4	G01R-033/48	Based on patent WO 9305405
EP 603323	B1	E	5	G01R-033/28	Based on patent WO 9305405
Designated States (Regional): DE NL					
DE 69211007	E			G01R-033/28	Based on patent EP 603323
					Based on patent WO 9305405
IT 1250094	B			A61B-000/00	

14/3/10 (Item 7 from file: 350)
DIALOG(R)File 350:Derwent WPIX

008122876
WPI Acc No: 1990-009877/199002
XRPX Acc No: N90-007576
NMR appts. measuring transversal relaxation **times - using quotient of real component and integrated imaginary component of fourier transformation values of sampled resonance signal**
Patent Assignee: PHILIPS GLOEILAMPENFAB NV (PHIG)
Inventor: MEHLKOPF A F; PRINS W M; MEHOKOPF A F
Number of Countries: 011 Number of Patents: 007

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
EP 350120	A	19900110	EP 89201752	A	19890703	199002	B
NL 8801731	A	19900201				199008	
FI 8903275	A	19900109				199012	
CN 1039484	A	19900207				199045	
US 5068610	A	19911126	US 89358327	A	19890526	199150	
EP 350120	B1	19940601	EP 89201752	A	19890703	199421	
DE 58907744	G	19940707	DE 507744	A	19890703	199427	
			EP 89201752	A	19890703		

Priority Applications (No Type Date): NL 881731 A 19880708

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 350120	A	G	11		
	Designated States (Regional): CH DE ES FR GB IT LI				
EP 350120	B1	G	12	G01R-033/50	
	Designated States (Regional): CH DE ES FR GB IT LI				
DE 58907744	G			G01R-033/50	Based on patent EP 350120

?

John Sims EIC 3700 308-4836

12/KWIC/1 (Item 1 from file: 348)

A method for magnetic resonance **imaging of the lung**

...ABSTRACT A1

A method for the assessment of pulmonary ventilation and lung perfusion through **Magnetic Resonance** Imaging (**MRI**), comprising the steps of:
- positioning a human subject in an **MRI** apparatus,
- delivering a hyperpolarized noble gas to the subject by inhalation, followed by a breath-hold period, during which a bolus of a contrast agent for **MRI** is injected intravenously,
- acquiring, during the breath-hold period, at least one **MR** image of the lungs prior to the bolus intravenous injection and at least one **MR** image thereafter.

...SPECIFICATION A1

Technical Field

The present invention relates to the application of hyperpolarized gases to **magnetic resonance** imaging (**MRI**).

In particular, this invention relates to a method for the dynamic regional measurement of lung perfusion and ventilation using **magnetic resonance** imaging based on the use of hyperpolarized noble gases.

Technical Background

In the techniques of nuclear **magnetic resonance** (NMR) a magnetic field acts on the nuclei of atoms with fractional spin quantum numbers and polarizes them into alignment within some selected orientations. During...

...and displayed as images on a screen. For instance, computing the signals generated by the protons (1)H) of the water in contact with organic **tissues** enables to construct images (**MRI**) allowing direct visualization of internal **organs** in living beings. This is therefore a powerful tool in diagnostics, medical treatment and surgery.

There exist proton **MRI** techniques for **tissue** perfusion measurements, such as contrast enhanced **MRI** using very short echo time sequences (Berthezene Y et al., Contrast enhanced **MR** imaging of the lung: assessment of ventilation and perfusion. Radiology 7992, 183: 667-672; Habutu H. et al. Pulmonary perfusion: qualitative assessment with dynamic contrast-enhanced **MRI** using ultra-short TE and inversion recovery Turbo FLASH, Magn. Reson. Med. 1996; 36: 503-508) or spin labelling techniques (Mai VM and Berr SS: **MR** perfusion imaging of pulmonary parenchyma using pulsed arterial spin labelling techniques: FAIRER and FAIR. J. Magn. Reson. Imag. 1999; 9: 483-487) but are unfortunately difficult to perform in the lungs. Lung perfusion **MRI** is first penalized by a low proton density. Magnetic susceptibility effects due to the numerous air/ **tissue** interfaces also shorten the effective **transverse relaxation** time T2)) (Durney C. et al. - Cutillo, AG, editor; Application of **Magnetic Resonance** to the study of lung. Armonk: Futura Publishing Company; 1996, p. 141-175).

Recently, it has been proposed to use in the **MRI** of patients isotopes of some noble gases in hyperpolarized form. Although the signal from these isotopes in the naturally polarized state is very weak (5000 times weaker than from 1)H), hyperpolarization will effectively raise it about 104) to 105) times. Furthermore, the spin relaxation **parameters** of the hyperpolarized gases are very strongly influenced by the nature of the environment in which they distribute after administration (i.e. they provide a detailed array of signals of different intensities), which

makes them very interesting contrast agents in **MR** imaging.

Hyperpolarizing noble gases is usually achieved by spin-exchange interactions with optically excited alkali metals in the presence or in the absence of an...

...et al., AIP Conf. Proc. #131 (Workshop on Polarized 3He Beams and Targets, 1984).

WO-A-95/27438 discloses use of hyperpolarized gases in diagnostic **MRI** . For instance, after having been externally hyperpolarized, the gases can be administered to living subjects in gaseous or liquid form, either alone or in combination...

...of dead guinea-pigs and thereafter producing an NMR image of said lungs.

P. Bachert et al. Mag. Res. Med. 36 (1996), 192 disclose making **MR** images of the lungs of human patients after the latter inhaled hyperpolarized 3)He.

WO-A-99/47940 discloses a method for imaging pulmonary and cardiac vasculature and evaluating blood flow using dissolved polarized 129)Xe. This method is carried out by positioning a patient in a **magnetic resonance** apparatus and delivering polarized 129)Xe gas to the patient via inhalation such as with a breath-hold delivery procedure, exciting the dissolved gas phase...

...clinical scintigraphy technique used for functional pulmonary ventilation and perfusion assessment, and based on the inhalation of radioactive gas (133)Xe, 81)Kr), noble gas **MRI**0 offers an improved spatial and temporal resolution without ionizing radiation (Alderson PO and Martin EC, Pulmonary embolism: diagnosis with multiple imaging modalities, Radiology 1987; 164:297-312). However, **MRI** using ...the method according to WO-A-99/47940 is not sufficiently accurate, due to the difficulties to distinguish the signals from the gas dissolved in **tissues** and the gas dissolved in the blood. Furthermore, one has to deal with low signal intensities from dissolved gas.

Summary of the invention

Therefore, the...

...providing a method for simultaneously assessing lung perfusion and ventilation, which could overcome the drawbacks of the prior art methods, both those based on proton **MRI** techniques and those based on hyperpolarized noble gases.

Such a problem has been solved, according to the invention, by a method for the assessment of pulmonary ventilation and lung perfusion through **Magnetic Resonance** Imaging (**MRI**), comprising the steps of:

- positioning a human subject in an **MRI** apparatus,
- delivering a hyperpolarized noble gas to the subject by inhalation, followed by a breath-hold period, during which a bolus of a contrast agent for **MRI** is injected intravenously,
- acquiring, during said breath-hold period, at least one **MR** image of the lungs prior to said bolus intravenous injection and at least one **MR** image thereafter.

Said at least one **MRI** image acquired after the bolus intravenous injection is taken during the passage of the contrast agent in the pulmonary vasculature.

The contrast agent for **MRI** used in the present method preferably contains a compound selected among the group comprising superparamagnetic iron oxide nanoparticles (SPIO), ultrasmall superparamagnetic iron oxide nanoparticles (USPIO...

...R) (AMI 227) (Guerbet): Fe3))O4)) particles coated with dextran; AMI 21: Fe3))O4)) particles coated with siloxane; (Jung CW et al. Physical and chemical **properties** of superparamagnetic iron oxide **MR** contrast agents: Ferumoxides, ferumoxtran, ferumoxsil; **Magnetic Resonance** Imaging 13: 661-674 (1995)),
- RESOVIST(R) or SHU 555A (from Schering - Hamm B et al., A new superparamagnetic iron oxide contrast agent for **magnetic resonance** imaging; Investigative Radiology 29; S87-S89 (1994)): Fe3))O4)) particles coated with carboxydextran,
- NC100150 (from Nycomed - Kellar Ke et al. NC100150, a preparation of iron oxide nanoparticles ideal for positive-contrast **MR** angiography, **Magnetic Resonance** Materials in Physics, Biology and Medecine 8: 207-213 (1999)): Fe3))O4)) particles coated with starch.

The injected dose of the contrast agent containing SPIO...

...DTPA-BMA (Omniscan(R) from Nycomed), GADOVERSETAMIDE (complex of gadolinium with DTPA-bis(methoxyethylamide) from Mallinckrodt), Gadomer-17 (dendrimer from Schering - Qian Dong et al., **Magnetic Resonance** Angiography with Gadomer-17; Investigative Radiology: 33, 9, 699-708 (1998)), Gd-EOB-DTPA (Gd-ethoxybenzyl-DTPA - Eovist(R) from Schering); Gadobutrol (Gadovist(R) from...

...R)-(4,4-diphenylcyclohexyl)phosphonooxymethyldietilentriaminpenaacetic acid trisodium salt - ANGIOMARK(R) from Mallinckrodt - Lauffer RB et al.; MS 325: a small-molecule vascular imaging agent for **magnetic resonance** imaging; Academic Radiology 3: S356-S358 (1996)).

These complexes are administered intravenously in a dose of 0.05 to 0.5 mmol Gd/kg

As an example of Manganese complexes, it is cited TESLASCAN(R) or MANGAFODIPIR, a Manganese complex Mn-DPDP from Nycomed (Lim KO et al., Hepatobiliary **MR** imaging first human experience with Mn-DPDP; Radiology 178: 79-82 (1991)

The hyperpolarized noble gas is selected from the group comprising 3)He, 129...

...The method according to the present invention proposes for the first time the combined use of a contrast agent, so far used only in proton **MRI** techniques, and a hyperpolarized noble gas. Through this combination surprisingly good results have been obtained in the assessment of the pulmonary ventilation and, above all...

...first pass of the contrast agent in the pulmonary vasculature brings about a marked increase of the magnetic susceptibility difference between the alveoli spaces and **tissue** .

In NMR, static field inhomogeneities generated by these magnetic susceptibility differences induce increased dephasing effects of the transverse nuclear magnetization which in turn results in...of contrast agent; Fig. 1c is the same curve as Fig. 1b after correction of RF pulse effects.

Fig. 2 is an example of dynamic **MR** images of both lungs of a rat extracted from a series of 40 images obtained with a spiral type **MRI** sequence.

Fig. 3 represents the relative pulmonary blood volume (rBV) map.

Detailed description of the invention

The invention will be now further illustrated with reference...

...polarized Helium3 for the ventilation experiments. The animal lungs were then maintained filled with the polarized gas for an held breath period during which the **MRI** data were acquired. An intravenous catheter was also introduced in a rat vein tail and the rat was then positioned in the

magnet isocenter.

Magnetic Resonance imaging
The NMR studies were performed using a small-bore 2 Tesla magnet. Following the 3)He inhalation, a series of 40 transverse slice-selective ...

...scout images and was located to contain the animal heart.
Each image of the series was obtained in 240 milliseconds using an interleaved spiral-type **MRI** sequence (Ahn CB et al. High speed spiral scan echo planar NMR imaging, IEEE 1986; MI-5, 1: 2-7; Meyer CH et al. Fast Coronary artery imaging, Magn. Reson. Med. 1992, 28: 202-213; Ruppert K. Et al. Real time **MR** imaging of pulmonary gasflow dynamics with hyperpolarized He3, Proceedings of the 6th) Scientific Meeting of ISMRM, Sydney, 1998, p. 1909) .
A number of 12 interleaved...

...3)He spin-lattice relaxation, and the decrease of polarization due to previous radiofrequency excitation (Johnson GA et al., Dynamics of magnetization in hyperpolarized gas **MRI** of the lungs, Magn. Reson. Med. 1997; 38, 66-71; Moller HE et al., Signal dynamics in **magnetic resonance** imaging of the ...difference between two media can generate static magnetic field distortion in the vicinity of the media interfaces (Ogawa S. et al. Oxygenation-sensitive contrast in **Magnetic Resonance** Image of rodent brain at high magnetic fields, Magn. Reson. Med. 1990, 14, 68-78). This effect is also exploited in proton **MRI** for the assessment of blood volume or blood flow in **tissues** (see e.g. Rosen BR et al., Perfusion imaging with NMR contrast agent. Magn Reson med 1990; 14,:249-265; Axel L. Methods Using Blood Pool Tracers. In : Le Bihan D, editor. Diffusion and Perfusion **Magnetic Resonance** Imaging. New-York : Raven Press; 1995. p 205-211; Caramia F et al. In : Le Bihan D , editor. Diffusion and Perfusion **Magnetic Resonance** Imaging. New-York : Raven Press; 1995. p 255-267; Ostergaard L et al., High resolution measurement of rCBF using intravascular tracer bolus passages. Part 1...

...bubble reached and obstructed the pulmonary artery of the lung in the upper position, inducing a local perfusion defect (Berthezene Y. et al., Contrast-enhanced **MR** imaging of the lung; Assessment of ventilation and perfusion, Radiology 7992; 183: 667-672).
Figure 2 shows the time-course 3)He ventilation images including the gas arrival in the lungs and the contrast agent pass in the lung blood vessels. Such images were obtained with a spiral type **MRI** sequence.
Image 2a is a pre-contrast image whereas images 2b to 2f correspond to the bolus pass. It can be remarked the signal decay...

...al.; Ostergaard L. et al., as cited above).
According to Stewart-Hamilton model, regional blood volume rBV, can be estimated by integrating the contrast agent **tissues** concentration C(t) (Lassen NA and Perl W, Tracer kinetic methods in medical physiology, New York; Raven Press; 1984).
Using dynamic **MRI** , the method is based on the assumption that the variations of the apparent **transverse relaxation** rate (DELTA)R*2))(t) are proportional to the contrast agent concentration C(t). Briefly, the variation of the **transverse relaxation** rate (DELTA)R*2))(t) during the contrast bolus can be determined from the logarithm of the NMR signal intensity S(t). The relative blood...

...and wide trough, which may be due to the diluted contrast agent recirculation and spread.
A relative pulmonary blood volume map was generated on a **pixel** -by-

pixel basis from the corrected 3)He ventilation images. In order to eliminate any contribution from recirculation, a gamma-variate function was used to fit the...defect induced by the air bubble injection.

From the above-reported experimental results it appears that the method of the present invention represents the first **MRI** application based on the local magnetic interactions between the pulmonary vasculature medium and the nuclear spins of the gas in the alveoli, allowing simultaneous high resolution lung ventilation/perfusion imaging.

This method opens up a wide range of new applications in the field of lung **MRI** . Indeed, it represents a powerful way to circumvent the low **MRI** sensitivity in lungs and to access pulmonary parenchyma perfusion. These potentials are illustrated by the rBV map discussed above, which constitutes a fundamental step towards quantitative pulmonary regional blood volume measurements using **MRI** .

The method according to the present invention will certainly represent an important tool in the future for the investigation of lung physiology and for contributing...

...CLAIMS manufacture of a contrast agent to be used in combination with a hyperpolarized noble gas for the assessment of pulmonary ventilation and lung perfusion through **Magnetic Resonance** Imaging (**MRI**).

2. Use according to claim 1, wherein said assessment of the pulmonary ventilation and lung perfusion is carried out by a method comprising the steps of:
   - positioning a human subject in an **MRI** apparatus,
   - delivering said hyperpolarized noble gas to the subject by inhalation, followed by a breath-hold period, during which a bolus of said contrast agent is injected intravenously,
   - acquiring, during said breath-hold period, at least one **MR** image of the lungs prior to said bolus intravenous injection and at least one **MR** image thereafter.

3. Use according to any one of claims 1 and 2, wherein said contrast agent is a suspension of SPIO or USPIO selected...

...in the range of 0.05 to 0.5 mmol Gd/kg.

10. A method for the assessment of pulmonary ventilation and lung perfusion through **Magnetic Resonance** Imaging (**MRI**), comprising the steps of:
   - positioning a human subject in an **MRI** apparatus,
   - delivering a hyperpolarized noble gas to the subject by inhalation, followed by a breath-hold period, during which a bolus of a contrast agent for **MRI** is injected intravenously,
   - acquiring, during said breath-hold period, at least one **MR** image of the lungs prior to said bolus intravenous injection and at least one **MR** image thereafter.

11. A method according to claim 10, wherein said contrast agent contains a compound selected from the group comprising superparamagnetic iron oxide nanoparticles...

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? s s12
     S13       31  S12
? rd
>>>Duplicate detection is not supported for File 348.
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>>>All specified files are unsupported, command ignored.
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13/3,AB/1 (Item 1 from file: 348)

DIALOG(R)File 348:EUROPEAN PATENTS

01334046
A method for magnetic resonance **imaging of the lung**
Verfahren zur Abbildung der Lunge mittels magnetischer Resonanz
Procede pour l'imagerie des poumons par resonance magnetique
PATENT ASSIGNEE:
Bracco International B.V., (1771643), 35 Strawinskylaan, 1077 ZX Amsterdam, (NL), (Applicant designated States: all)
CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE, (428835), 3, rue Michel Ange, 75016 Paris Cedex, (FR), (Applicant designated States: all)
INVENTOR:
Cremillieux, Yannick, 187 Avenue Felix Faure, 69003 Lyon, (FR)
Berthezene, Yves, 32 Chemin de Fontaniere, 69110 Ste Foy Les Lyon, (FR)
Viallon, Magalie, 41 Rue Burdeau, 69001 Lyon, (FR)
LEGAL REPRESENTATIVE:
Zardi, Marco (88482), M. Zardi & Co. Via Pioda, 6, 6900 Lugano, (CH)
PATENT (CC, No, Kind, Date): EP 1139109 A1 011004 (Basic)
APPLICATION (CC, No, Date): EP 2000106635 000328;
DESIGNATED STATES: AT; BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE; IT; LI; LU; MC; NL; PT; SE
EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI
INTERNATIONAL PATENT CLASS: G01R-033/28

ABSTRACT EP 1139109 A1
A method for the assessment of pulmonary ventilation and lung perfusion through **Magnetic Resonance** Imaging (**MRI**), comprising the steps of:
- positioning a human subject in an **MRI** apparatus,
- delivering a hyperpolarized noble gas to the subject by inhalation, followed by a breath-hold period, during which a bolus of a contrast agent for **MRI** is injected intravenously,
- acquiring, during the breath-hold period, at least one **MR** image of the lungs prior to the bolus intravenous injection and at least one **MR** image thereafter.
ABSTRACT WORD COUNT: 86
NOTE:
Figure number on first page: 2

LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	200140	558
SPEC A	(English)	200140	3817
Total word count - document A			4375
Total word count - document B			0
Total word count - documents A + B			4375

13/3,AB/2 (Item 2 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

01081155
System and method for improved water and fat separation using a set of low resolution MR **images**
System und Verfahren zur verbesserten Trennung von Wasser und Fett mittels eines Satzes von Magnetresonazbildern mit niedriger Auflosung
Systeme et procede pour mieux separer l'eau et les lipides en utilisant une serie d'images RM a basse resolution
PATENT ASSIGNEE:
GENERAL ELECTRIC COMPANY, (203903), 1 River Road, Schenectady, NY 12345, (US), (Applicant designated States: all)

INVENTOR:
Ma, Jingfei, 1868 Haymarket Road, Waukesha, Wisconsin 53186, (US)
LEGAL REPRESENTATIVE:
Pedder, James Cuthbert et al (34801), GE London Patent Operation, Essex House, 12/13 Essex Street, London WC2R 3AA, (GB)
PATENT (CC, No, Kind, Date): EP 950902 A2 991020 (Basic)
EP 950902 A3 010808
APPLICATION (CC, No, Date): EP 99302955 990416;
PRIORITY (CC, No, Date): US 61486 980417
DESIGNATED STATES: DE; NL
EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI
INTERNATIONAL PATENT CLASS: G01R-033/54

ABSTRACT EP 950902 A2
A system and method for improved water and fat separation in **magnetic resonance** imaging (**MRI**) is disclosed using a set of low-resolution images to correct phase errors with overall reduced scan time and post-processing time and enhanced reliability. Several embodiments are disclosed whereby reliable water and fat separation is achieved in nearly one NEX, Two NEX, or Three NEX regular imaging times. In the one embodiment, a regular image data set having water and fat phase-shifted by 90(degree) is acquired, along with two low-resolution image data sets where water and fat are phase-shifted by 0(degree) and 180(degree) are acquired. In another embodiment, two regular image data sets having water and fat phase-shifted by 0(degree) and 180(degree) are acquired, and a low-resolution image data set having water and fat phase-shifted by 90(degree) is acquired. In post-processing, three low-resolution images are reconstructed and the phase factors for all the pixels with appreciable amounts of both water and fat are determined. For pixels with a single spectral component or low SNR, phase factors are obtained in a region-growing process designed specifically to ensure spatial phase continuity. Once the low-resolution phase factors are available, they are used either for correcting the phase errors in the regular image in the One NEX embodiment, or for guiding a binary choice between two possible solutions from the two regular images in the Two NEX embodiment. Other embodiments are also disclosed herein besides a reduction in scan time, the image processing time is also reduced in the proposed technique due to the use of images with reduced matrix size, increased SNR, and fewer pixels with single spectral component.
ABSTRACT WORD COUNT: 271
NOTE:
Figure number on first page: 2

LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	9942	2225
SPEC A	(English)	9942	7781
Total word count - document A			10006
Total word count - document B			0
Total word count - documents A + B			10006

13/3,AB/3 (Item 3 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

01034676
Magnetic resonance **imaging using pattern recognition**
Magnetresonanzbildgebung unter Verwendung von Mustererkennung
Imagerie par resonance magnetique utilisant une identification de motifs

John Sims EIC 3700 308-4836

PATENT ASSIGNEE:
  UNIVERSITY OF WASHINGTON, (1332174), 4225 Roosevelt Way, North East, Suite 301,, Seattle, WA 98105, (US), (Applicant designated States: all)
INVENTOR:
  Smith, Justin P., 11006 N E 41st Drive, Kirkland, Washington 98033, (US)
LEGAL REPRESENTATIVE:
  Cross, Rupert Edward Blount et al (42891), BOULT WADE TENNANT, 27 Furnival Street, London EC4A 1PQ, (GB)
PATENT (CC, No, Kind, Date): EP 919826 A2 990602 (Basic)
EP 919826 A3 991020
APPLICATION (CC, No, Date): EP 98204133 930513;
PRIORITY (CC, No, Date): US 883565 920515
DESIGNATED STATES: AT; BE; DE; ES; FR; GB; IT; NL
RELATED PARENT NUMBER(S) - PN (AN):
  EP 640220 (EP 93911310)
INTERNATIONAL PATENT CLASS: G01R-033/44; G01R-033/50
ABSTRACT EP 919826 A2

An **MRI** technique in which the similarity of samples from different portions of a body is determined and displayed. In one embodiment, the method can be used to track the spread of a known primary tumor to other portions of a patient's body. The **MRI** apparatus is used to produce a training set comprising one or more training samples. The training set is formed from a plurality of congruent first images of a training region of the body. Each first image is produced using an **MRI** pulse sequence different from the pulse sequences used to produce the other first images. Each first image comprises an array of pixels, and each training sample comprises a spatially aligned set of pixels from each first image. The same technique is used to produce a plurality of test samples corresponding to a test region of the same body. The test samples are produced using the same pulse sequences as the training samples. The training and test samples are then compared, to produce similarity data indicating, for each sample, the degree of similarity between the test sample and the training samples. A display is then generated based upon the similarity data.

ABSTRACT WORD COUNT: 197
NOTE:
  Figure number on first page: 4
LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	9922	1558
SPEC A	(English)	9922	7983
Total word count - document A			9541
Total word count - document B			0
Total word count - documents A + B			9541

13/3,AB/4 (Item 4 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

00960279
Method for measuring the reversible contribution to the tranverse relaxation rate in magnetic resonance **imaging**
Methode zur Messung des reversiblen Beitrags zur transversalen Relaxationsrate **in der bildgebenden magnetischen Resonanz**
Methode pour determiner la contribution reversible au taux de relaxation transversale dans l'imagerie par resonance magnetique
PATENT ASSIGNEE:
  THE TRUSTEES OF THE UNIVERSITY OF PENNSYLVANIA, (1136393), 3700 Market

Street, Suite 300, Philadelphia, Pennsylvania 19104, (US), (applicant designated states:
AT;BE;CH;CY;DE;DK;ES;FI;FR;GB;GR;IE;IT;LI;LU;MC;NL;PT;SE)
INVENTOR:
Ma, Jingfei, 1868 Haymarket Road, Waukesha, Wisconsin 53816, (US)
Wehrli, Felix, 424 Conshohocken State Road, Bala Cynwyd, Pennsylvania 19004, (US)
LEGAL REPRESENTATIVE:
Hallybone, Huw George et al (53031), CARPMAELS AND RANSFORD 43 Bloomsbury Square, London WC1A 2RA, (GB)
PATENT (CC, No, Kind, Date): EP 871038 A1 981014 (Basic)
APPLICATION (CC, No, Date): EP 98302832 980409;
PRIORITY (CC, No, Date): US 843011 970411
DESIGNATED STATES: AT; BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE; IT; LI; LU; MC; NL; PT; SE
INTERNATIONAL PATENT CLASS: G01R-033/50

ABSTRACT EP 871038 A1
A technique for accurately measuring two different spin configurations of transverse magnetization from which the reversible dephasing rate constant R2))' can be calculated. Such reversible dephasing may be caused by magnetic field inhomogeneity such as arising from intravascular changes in the oxidation state of hemoglobin, from brain iron, or from cancellous bone, which allows these characteristics to be measured. The different spin configurations can be measured in a single scan by deriving a small R2))' through independent and separate measurements of the two magnetization configurations generated by two RF pulses. The two configurations can be recalled independently of each other since they are affected differently by respective gradients flanking the (beta)-pulse which permit one spin configuration to decay with T2)) while the other decays with T2))*) from the same RF pulse. Since the spin configurations come from the same RF pulse, they have the same relaxation time, thus permitting small changes in T2))', and hence R2))', to be measured by setting the relaxation time of both configurations to be long.
ABSTRACT WORD COUNT: 171

LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	9842	1566
SPEC A	(English)	9842	3796
Total word count - document A			5362
Total word count - document B			0
Total word count - documents A + B			5362

13/3,AB/5 (Item 5 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

00934267
A method and an automatic system for obtaining water-content and/or electric-permittivity maps from magnetic resonance **images**
Ein Verfahren und ein automatisches System zur Erstellung der Verteilung des Wassergehaltes und/oder der elektrischen Permittivitat aus Bildern erzeugt durch ma
Un procede et un systeme automatique pour l'etablissement de la distribution de la teneur en eau et/ou de la permittivite electrique a partir d'images de resona

PATENT ASSIGNEE:
ISTITUTO TRENTINO DI CULTURA, (1223560), Via S. Croce 77, I-38100 Trento, (IT), (applicant designated states: AT;BE;CH;DE;DK;ES;FI;FR;GB;GR;IE;IT;LI;LU;MC;NL;PT;SE)
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Christo-Foretti, Luca, Via Gocciadoro 19, 38100 Trento, (IT)
Scarpa, Marina, Via Marnighe 17/2, 38050 Cognola (Trento), (IT)
Antolini, Renzo, Via dei Pozati 4, 38050 Cognola (Trento), (IT)
LEGAL REPRESENTATIVE:
Quinterno, Giuseppe et al (51431), c/o JACOBACCI & PERANI S.p.A. Corso Regio Parco, 27, 10152 Torino, (IT)
PATENT (CC, No, Kind, Date): EP 851236 A1 980701 (Basic)
APPLICATION (CC, No, Date): EP 97122635 971222;
PRIORITY (CC, No, Date): IT 96TO1089 961227
DESIGNATED STATES: AT; BE; CH; DE; DK; ES; FI; FR; GB; GR; IE; IT; LI; LU; MC; NL; PT; SE
INTERNATIONAL PATENT CLASS: G01R-033/48

ABSTRACT EP 851236 A1
Magnetic resonance images (NMR, **MRI**) are subjected to quantitative analysis of the water content of individual regions of the images, preferably with treatment of relaxation effects, correction for non-uniformities, and taking account of the possible presence of fat **tissue** . Respective electric-permittivity values can be generated from the aforementioned water-content maps to produce electric-permittivity maps of the object observed.
ABSTRACT WORD COUNT: 59

LANGUAGE (Publication,Procedural,Application): English; English; Italian
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	9827	802
SPEC A	(English)	9827	5509
Total word count - document A			6311
Total word count - document B			0
Total word count - documents A + B			6311

13/3,AB/6 (Item 6 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

00846974
A METHOD OF DETERMINING OXYGEN CONCENTRATION IN A SAMPLE
EIN VERFAHREN ZUR BESTIMMUNG DER KONZENTRATION VON SAUERSTOFF IN EINER PROBE
PROCEDE SERVANT A DETERMINER LA CONCENTRATION D'OXYGENE DANS UN ECHANTILLON
PATENT ASSIGNEE:
Nycomed Imaging AS, (2629392), Nycoveien 1-2 P.O.Box 4220 Nydalen, 0401 Oslo, (NO), (Proprietor designated states: all)
INVENTOR:
ARDENKJAER-LARSEN, Jan, Henrik, Lupinvej 3, DK-2720 Vanlose, (DK)
LEUNBACH, Ib, Markmandsgade 5 5h, DK-2300 Kobenhavn S, (DK)
LEGAL REPRESENTATIVE:
Hammett, Audrey Grace Campbell (84542), Nycomed Amersham plc, Amersham Laboratories, White Lion Road, Amersham, Buckinghamshire HP7 9LL, (GB)
PATENT (CC, No, Kind, Date): EP 871896 A1 981021 (Basic)
EP 871896 B1 020130

WO 9709633 970313
APPLICATION (CC, No, Date): EP 96929434 960906; WO 96GB2198 960906
PRIORITY (CC, No, Date): GB 9518442 950908; US 546146 951024; GB 9612931 960620
DESIGNATED STATES: AT; BE; CH; DE; DK; ES; FI; FR; GB; GR; IE; IT; LI; LU; MC; NL; PT; SE
EXTENDED DESIGNATED STATES: AL; LT; LV; SI
INTERNATIONAL PATENT CLASS: G01R-033/62
NOTE:
No A-document published by EPO
LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	200205	487
CLAIMS B	(German)	200205	453
CLAIMS B	(French)	200205	558
SPEC B	(English)	200205	10980
Total word count - document A			0
Total word count - document B			12478
Total word count - documents A + B			12478

13/3,AB/7 (Item 7 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

00655380
IMAGE NEUROGRAPHY AND DIFFUSION ANISOTROPY IMAGING
NEUROGRAPHISCHE ABBILDUNGSVERFAHREN UND DIFFUSIONS-ANISTROPIE
SYSTEME D'IMAGERIE NEUROGRAPHIQUE A ANISOTROPIE DE DIFFUSION
PATENT ASSIGNEE:
UNIVERSITY OF WASHINGTON, (1332172), Office of Technology Transfer, Suite 301, 4225 Roosevelt Way N.E., Seattle, WA 98105, (US), (applicant designated states: AT;BE;CH;DE;DK;ES;FR;GB;GR;IE;IT;LI;LU;MC;NL;PT;SE)
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TSURUDA, Jay, S., 6120 - 84th Avenue S.E., Mercer Island, WA 98040, (US)
RICHARDS, Todd, L., 18211 - 60th Avenue N.E., Seattle, WA 98155, (US)
LEGAL REPRESENTATIVE:
Spall, Christopher John (36171), BARKER BRETTELL 138 Hagley Road, Edgbaston Birmingham B16 9PW, (GB)
PATENT (CC, No, Kind, Date): EP 630481 A1 941228 (Basic)
EP 630481 B1 990630
WO 9318415 930916
APPLICATION (CC, No, Date): EP 93907274 930308; WO 93US2036 930308
PRIORITY (CC, No, Date): GB 9205058 920309; GB 9205541 920313; GB 9207013 920330; GB 9209648 920505; GB 9210810 920521; GB 9216383 920731; GB 9301268 930122
DESIGNATED STATES: AT; BE; CH; DE; DK; ES; FR; GB; GR; IE; IT; LI; LU; MC; NL; PT; SE
INTERNATIONAL PATENT CLASS: G01R-033/56;
NOTE:
No A-document published by EPO
LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	9926	760

CLAIMS B	(German)	9926	684
CLAIMS B	(French)	9926	828
SPEC B	(English)	9926	18644
Total word count - document A			0
Total word count - document B			20916
Total word count - documents A + B			20916

13/3,AB/8 (Item 8 from file: 348)

DIALOG(R)File 348:EUROPEAN PATENTS
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00611288
MAGNETIC RESONANCE **IMAGING USING PATTERN RECOGNITION**
BILDERZEUGUNG DURCH MUSTERERKENNUNG MITTELS MAGNETISCHER RESONANZ
RESONANCE MAGNETIQUE NUCLEAIRE UTILISANT UNE IDENTIFICATION DE MOTIFS
PATENT ASSIGNEE:
UNIVERSITY OF WASHINGTON, (1332172), Office of Technology Transfer, Suite 301, 4225 Roosevelt Way N.E., Seattle, WA 98105, (US), (Proprietor designated states: all)
INVENTOR:
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LEGAL REPRESENTATIVE:
Cross, Rupert Edward Blount et al (42891), BOULT WADE TENNANT, 27 Furnival Street, London EC4A 1PQ, (GB)
PATENT (CC, No, Kind, Date): EP 640220 A1 950301 (Basic)
EP 640220 B1 991124
WO 9323762 931125
APPLICATION (CC, No, Date): EP 93911310 930513; WO 93US4572 930513
PRIORITY (CC, No, Date): US 883565 920515
DESIGNATED STATES: AT; BE; DE; ES; FR; GB; IT; NL
RELATED DIVISIONAL NUMBER(S) - PN (AN):
EP 919826 (EP 98204133)
INTERNATIONAL PATENT CLASS: G01R-033/56
NOTE:
No A-document published by EPO
LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	9947	863
CLAIMS B	(German)	9947	798
CLAIMS B	(French)	9947	972
SPEC B	(English)	9947	7203
Total word count - document A			0
Total word count - document B			9836
Total word count - documents A + B			9836

13/3,AB/9 (Item 9 from file: 348)

DIALOG(R)File 348:EUROPEAN PATENTS
(c) 2004 European Patent Office. All rts. reserv.

00234644
LOW R.F. DOSAGE MAGNETIC RESONANCE **IMAGING OF HIGH VELOCITY FLOWS.**
KERNSPINTOMOGRAPHIE VON HOCHGESCHWINDIGKEITSSTROMUNGEN MIT GERINGER RADIOFREQUENZBELASTUNG.
FORMATION D'IMAGES DE MATIERES S'ECOULANT A VITESSE ELEVEE PAR RESONANCE MAGNETIQUE A FAIBLE DOSAGE HF.
PATENT ASSIGNEE:
PICKER INTERNATIONAL, INC., (571720), 595 Miner Road, Highland Heights

Ohio 44143, (US), (applicant designated states: DE;GB;NL)
INVENTOR:
NAYLER, Graham, Leslie 5 Cameron Avenue, Abingdon, Oxon, (GB)
PATTANY, Pradip, Mathuradas, 2250 Parlane Suite 520, Willoughby, OH 44094 , (US)
LEGAL REPRESENTATIVE:
Pope, Michael Bertram Wingate (34911), Central Patent Department Wembley Office The General Electric Company, p.l.c. Hirst Research Centre East Lane, Wembley Middlesex HA9 7PP, (GB)
PATENT (CC, No, Kind, Date): EP 233237 A1 870826 (Basic)
EP 233237 B1 910911
WO 8701201 870226
APPLICATION (CC, No, Date): EP 86904859 860731; WO 86GB459 860731
PRIORITY (CC, No, Date): US 766757 850816; US 798750 851115
DESIGNATED STATES: DE; GB; NL
INTERNATIONAL PATENT CLASS: G01N-024/08;
NOTE:
No A-document published by EPO
LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	EPBBF1	860
CLAIMS B	(German)	EPBBF1	730
CLAIMS B	(French)	EPBBF1	1063
SPEC B	(English)	EPBBF1	4861
Total word count - document A			0
Total word count - document B			7514
Total word count - documents A + B			7514

13/3,AB/10 (Item 1 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

01068840
SYSTEMS AND METHODS FOR ASSESSING BLOOD FLOW IN A TARGET TISSUE
SYSTEMES ET PROCEDES D'EVALUATION DU DEBIT SANGUIN DANS UN TISSU CIBLE
Patent Applicant/Assignee:
CASE WESTERN RESERVE UNIVERSITY, 10900 Euclid Avenue, Cleveland, OH 44106-4971, US, US (Residence), US (Nationality), (For all designated states except: US)
Patent Applicant/Inventor:
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DUERK Jeffrey L, 519 Rockwood Court, Avon Lake, OH 44012, US, US (Residence), US (Nationality), (Designated only for: US)
LEWIN Jonathan S, 24604 Letchworth Road, Beachwood, Ohio 44122, US, US (Residence), US (Nationality), (Designated only for: US)
Legal Representative:
DOCHERTY Pamela A (et al) (agent), Calfee, Halter & Griswold LLP, 800 Superior Avenue, Cleveland, OH 44114, US,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200396884 A2 20031127 (WO 0396884)
Application: WO 2003US15656 20030519 (PCT/WO US0315656)
Priority Application: US 2002381148 20020517
Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM PH PL PT RO RU SC SD SE SG SK SL TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW (EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LU MC NL PT RO SE SI SK TR

John Sims EIC 3700 308-4836

(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 5118

English Abstract
A method is provided for determining an analog for blood flow in a target **tissue** of a subject, comprising: acquiring a baseline set of **MR** images prior to injection of a contrast agent into the vasculature of the subject; acquiring a set of **MR** images after injection of a contrast agent into the vasculature of the subject; computing two or more concentration values from the set of images; computing a derivative of the concentration values; computing the maximum value of the derivative curve to provide a value which is an analog for blood flow. A system for determining an analog for blood flow in a target **tissue** of a subject, comprising: input logic for acquiring a baseline set of **MR** images prior to injection of a contrast agent into the vasculature of the subject; input logic for acquiring a set of **MR** images after injection of a contrast agent into the vasculature of the subject; logic for computing two or more concentration values from the set of images; logic for computing a derivative of the concentration; and logic for computing the maximum value of the derivative curve to output an analog for blood flow.

French Abstract
Procede de determination d'un analogue du debit sanguin dans le tissu cible d'un sujet. Ce procede consiste a obtenir un ensemble ligne de base d'images IRM avant l'injection d'un agent de contraste dans le systeme vasculaire du sujet ; obtenir un ensemble d'images IRM apres l'injection d'un agent de contraste dans le systeme vasculaire du sujet ; calculer au moins deux valeurs de concentration a partir de l'ensemble d'images ; calculer une derivee des valeurs de concentration ; calculer la valeur maximale de la courbe de derivee pour obtenir une valeur qui est un analogue du debit sanguin. L'invention porte egalement sur un systeme de determination d'un analogue du debit sanguin dans le tissu cible d'un sujet, ce systeme comprenant : une logique d'entree pour l'obtention d'un ensemble ligne de base d'images IRM apres l'injection d'un agent de contraste dans le systeme vasculaire du sujet ; une logique pour calculer au moins deux valeurs de concentration a partir de l'ensemble d'images ; une logique pour calculer une derivee des valeurs de concentration et une logique pour calculer la valeur maximale de la courbe de derivee pour produire un analogue du debit sanguin.

13/3,AB/11 (Item 2 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

01068692
METHOD AND APPARATUS FOR QUANTITATIVELY EVALUATING A KIDNEY
PROCEDE ET APPAREIL D'EVALUATION QUANTITATIVE D'UN REIN
Patent Applicant/Assignee:
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Patent Applicant/Inventor:
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NIMROD Maril, 25 Guatemala Street, 96704 Jerusalem, IL, IL (Residence), IL (Nationality), (Designated only for: US)
Legal Representative:
FLEIT Martin (et al) (agent), Fleit, Kain, Gibbons, Gutman & Bongini P.L., 601 Brickell Key Drive, Suite 404, Miami, FL 33131, US,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200396891 A1 20031127 (WO 0396891)
Application: WO 2003US15238 20030515 (PCT/WO US0315238)
Priority Application: US 2002380769 20020515
Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SC SD SE SG SK SL TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LU MC NL PT RO SE SI SK TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 13799

English Abstract
A method and apparatus for monitoring a kidney that consists of monitoring the corticomedullary sodium concentration gradient in a kidney by an imaging technique selected from the group consisting of **MRI** , optical imaging, computed tomography (CT), ultrasound or positron emission tomography (PET), to obtain dynamic images; processing the obtained images to quantitatively determine, **pixel** by **pixel** of the images, the concentration of sodium along the corticomedullary axis of the kidney; and mapping the sodium distribution at high resolution to indicate the sodium concentration gradient of the corticomedullary axis of the kidney. Preferably the monitoring is carried out using "sup"23Na **MRI** . Maps of the sodium distribution are displayed.

French Abstract
L'invention concerne un procede et un appareil de suivi d'un rein, le procede consistant a surveiller le gradient de concentration du sodium corticomedullaire dans un rein au moyen d'une technique d'imagerie selectionnee parmi le groupe comprenant l'IRM, l'imagerie optique, la tomographie informatisee, la tomographie d'emission de positron ou ultrasonore, afin d'obtenir des images dynamiques, a traiter les images obtenues afin de determiner quantitativement, **pixel** par **pixel** , la concentration en sodium le long de l'axe corticomedullaire du rein, et a cartographier la distribution de sodium, a haute resolution, afin d'indiquer le gradient de concentration en sodium de l'axe corticomedullaire du rein. Le suivi est de preference realise par utilisation d'IRM au "sup"23Na. Des cartes de distribution de sodium sont presentees.

13/3,AB/12 (Item 3 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

01027449
METHOD AND APPARATUS FOR DETECTING VULNERABLE ATHEROSCLEROTIC PLAQUE
METHODE ET APPAREIL DE DETECTION D'UNE PLAQUE D'ATHEROSCLEROSE VULNERABLE
Patent Applicant/Assignee:
VOLCANO THERAPEUTICS INC, Suite 200, 28202 Cabot Road, Laguna Niguel, CA 92677, US, US (Residence), US (Nationality)

John Sims EIC 3700 308-4836

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NAGHAVI Morteza, 6431 Fannin, Suite 1.246 MSB, University of Texas, Houston Medical School, Division of Cardiology, Houston, TX 77030, US,
Legal Representative:
CANTER Bruce M (et al) (agent), Oppenheimer Wolff & Donnelly LLP, Suite 700, 840 Newport Center Drive, Newport Beach, CA 92660-7007, US,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200357040 A1 20030717 (WO 0357040)
Application: WO 2002US11125 20020408 (PCT/WO US0211125)
Priority Application: US 200133731 20011226
Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG UZ VN YU ZA ZM ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 25806

English Abstract
Methods and devices are disclosed for detecting vulnerable atherosclerotic plaque, or plaque at risk of reducing blood flow in a vessel, by identifying a region of elevated temperature along a living vessel wall. Infrared heat sensing catheters (40) useful for identifying potentially fatal arterial plaques in patients with disease of the coronary or other arteries are also described.

French Abstract
L'invention concerne des methodes et des dispositifs permettant de detecter une plaque d'atherosclerose vulnerable ou une plaque presentant le risque de diminuer le flux sanguin dans un vaisseau, par le biais de l'identification d'une region de temperature elevee le long d'une paroi d'un vaisseau vivant. Ladite invention a egalement trait a des catheters de detection thermique a infrarouge (40) utilises pour identifier des plaques arterielles potentiellement fatales chez des patients souffrant d'une maladie de l'artere coronaire ou d'autres arteres.

13/3,AB/13 (Item 4 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

01021475
METHODS FOR ASSESSING AMIDE PROTON CONTENT AND PROPERTIES **IN VIVO VIA THE WATER RESONANCE**
PROCEDES POUR VERIFIER IN VIVO PAR RESONANCE DANS L'EAU LA TENEUR EN PROTONS ET LES PROPRIETES DES AMIDES
Patent Applicant/Assignee:
THE JOHN HOPKINS UNIVERSITY SCHOOL OF MEDICINE, 720 Rutland Avenue, Baltimore, MD 21205, US, US (Residence), US (Nationality)
Inventor(s):
VAN ZIJL Peter C M, 7712 Millstone Ct., Ellicott City, MD 20143, US,
ZHOU Jinyuan, 2911 Conroy Court, Apt. F, Baltimore, MD 21234, US,
Legal Representative:

John Sims EIC 3700 308-4836

DALEY William J Jr (agent), Edwards & Angell, LLP, P.O. Box 9169, Boston, MA 02209, US,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200350521 A1 20030619 (WO 0350521)
Application: WO 2002US39983 20021213 (PCT/WO US0239983)
Priority Application: US 2001339666 20011213
Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SK SL TJ TM TN TR TT TZ UA UG UZ VN YU ZA ZM ZW
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LU MC NL PT SE SI SK TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 13289

English Abstract
Featured is an **MRI** /NMR methodology or process to detect amide protons of endogenous mobile proteins and peptides via the water signal. Such methods and processes can be used for the purposes of detection of pH effects and amide proton content or content changes and related mobile protein and peptide content or content changes using **MR** imaging. Also featured are methods whereby assessment of determined pH effect and amide proton content or content changes and related mobile protein and/or peptide content or content changes can be used in connection with diagnosis, program and treatment of brain related disorders and diseases, cardiac disorders and diseases, and cancer and to use such methods for monitoring, detecting and assessing protein and peptide content in vivo and pathologically for any of a number of diseases or disorders of a human body, including but not limited to cancers, ischemia, Alzheimers and Parkinsons.

French Abstract
La presente invention concerne des procedes et des methodes a base d'IRM/RMN permettant de detecter les protons d'amides de peptides et de proteines mobiles endogenes en utilisant le signal de l'eau. Ces procedes et methodes permettent d'utiliser l'IRM pour detecter, d'une part les effets du pH et la teneur ou les variations de teneur en protons des amides, et d'autre part la teneur ou les variations de teneur des peptides et proteines mobiles de ces amides. L'invention concerne egalement des procedes par lesquels on peut se servir de la verification des effets determines du pH et de la teneur ou des variations de teneur en protons des amides, ainsi que de la teneur ou des variations de teneur en peptides et/ou en proteines mobiles de ces amides. En l'occurrence, on associe cette verification au diagnostic, a la programmation et au traitement de troubles et affections se rapportant a l'encephale, de troubles et affections cardiaques, et du cancer. Cela permet de surveiller, detecter et verifier la teneur en proteine et en peptide in vivo et pathologiquement pour l'un quelconque des differents troubles et affections d'un corps humain, et notamment, mais de facon non exaustive, les cancers, l'ischemie, et les maladies d'Alzheimer et de Parkinsons.

13/3,AB/14 (Item 5 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00925547

John Sims EIC 3700 308-4836

APPARATUS AND METHODS FOR ANALYZING AND IMPROVING AGRICULTURAL PRODUCTS
APPAREIL ET PROCEDES D'ANALYSE ET D'AMELIORATION DE PRODUITS AGRICOLES

Patent Applicant/Assignee:
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Inventor(s):
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Patent and Priority Information (Country, Number, Date):
Patent: WO 200259586 A2-A3 20020801 (WO 0259586)
Application: WO 2001US49823 20011219 (PCT/WO US0149823)
Priority Application: US 2000739871 20001220

Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG UZ VN YU ZA ZM ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW
(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English
Filing Language: English
Fulltext Word Count: 17110

English Abstract
Device and method for **magnetic resonance** imaging of agricultural products, e.g. seeds, to determine physical and chemical characterisitcs thereof, e.g. the oil content. The device used is adapted for high-throughput **MRI** screening in that it has a large bore size and in that it comprises a sampling device with a plurality of plates, each plate being comprised of a plurality of wells. When applied to the seeds, the method aims at selecting seeds for selectively breeding plants.

French Abstract
L'invention concerne un dispositif et un procede d'analyse de produits agricoles. Plus particulierement, cette invention concerne un dispositif et un procede d'analyse rapide et non destructrice des caracteristiques physiques et chimiques d'une ou plusieurs semences.

13/3,AB/15 (Item 6 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00890267
TECHNIQUE FOR MANIPULATING MEDICAL IMAGES
TECHNIQUE SERVANT A MANIPULER DES IMAGES MEDICALES

Patent Applicant/Assignee:
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Legal Representative:
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Patent and Priority Information (Country, Number, Date):
Patent: WO 200223483 A2-A3 20020321 (WO 0223483)

Application: WO 2001US42155 20010914 (PCT/WO US0142155)
Priority Application: US 2000232637 20000914; US 2000232639 20000914
Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PH PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 8116

English Abstract
The invention and the embodiments described in this invention provide new techniques for manipulating digital images and is particularly useful for extracting **tissues** (i.e., assigning **tissue** boundary locations) from medical images. These techniques can be applied to diagnosing arthritis and for monitoring disease progression or response to therapeutic intervention. The invention provides for means to extract the articular **cartilage** from medical images for analysis purposes.

French Abstract
L'invention et ses modes de realisation concernent de nouvelles techniques servant a manipuler des images numeriques et sont particulierement utiles pour extraire des tissus (c'est-a-dire, affectation d'emplacements limitrophes aux tissus) a partir d'images medicales. On peut appliquer ces techniques au diagnostic de l'arthrite et au controle de l'evolution d'une maladie ou de la reaction a une intervention therapeutique. Elle concerne des moyens servant a extraire le **cartilage** articulaire a partir d'images medicales afin de l'analyser.

13/3,AB/16 (Item 7 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00888337
ASSESSING THE CONDITION OF A JOINT AND DEVISING TREATMENT
EVALUATION DE L'ETAT D'UNE ARTICULATION ET TRAITEMENT AFFERENT
Patent Applicant/Assignee:
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Patent Applicant/Inventor:
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Legal Representative:
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Patent and Priority Information (Country, Number, Date):
Patent: WO 200222014 A1 20020321 (WO 0222014)
Application: WO 2001US28680 20010914 (PCT/WO US0128680)

Priority Application: US 2000662224 20000914
Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU
CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP
KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PH PL PT RO RU
SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 29798

English Abstract
Methods are disclosed for assessing the condition of a cartilage in a joint, particularly a human knee. The methods include converting an image such as an MRI to a three dimensional map of the cartilage. The cartilage map can be correlated to a movement pattern of the joint to assess the affect of movement on cartilage wear. Changes in the thickness of cartilage over time can be determined so that therapies can be provided. Information on thickness of cartilage and curvature of cartilage or subchondral bone can be used to plan therapy. Information on movement pattern can be used to plan therapy.

French Abstract
Cette invention a trait a des methodes d'evaluation de l'etat du cartilage d'une articulation, notamment celui du genou. On convertit, dans le cadre de ces methodes, une image, par exemple une image obtenue par resonance magnetique, en projection tridimensionnelle du cartilage. Il est possible de mettre en correlation cette figuration du cartilage avec un schema de mouvement de l'articulation, ce qui permet d'evaluer l'incidence du mouvement sur l'usure du cartilage. La determination des variations d'epaisseur du **cartilage** dans le temps sert a mettre au point des therapies adaptees. On peut utiliser les renseignements relatifs a l'epaisseur, a la courbure du **cartilage** ou de l'os sous-chondral, ainsi que ceux portant sur le schema de mouvement pour planifier une therapie.

13/3,AB/17 (Item 8 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00888336
ASSESSING CONDITION OF A JOINT AND CARTILAGE **LOSS**
EVALUATION DE L'ETAT D'UNE ARTICULATION ET D'UNE PERTE DE CARTILAGE
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Legal Representative:
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Patent and Priority Information (Country, Number, Date):
Patent: WO 200222013 A1 20020321 (WO 0222013)
Application: WO 2001US28679 20010914 (PCT/WO US0128679)
Priority Application: US 2000232637 20000914; US 2000232639 20000914
Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU
CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP

KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PH PL PT RO RU
SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 26760

English Abstract
Methods are disclosed for assessing the condition of a **cartilage** in a joint and assessing **cartilage** loss, particularly in a human knee. The methods include converting an image such as an **MRI** to a three dimensional map of the **cartilage** . The **cartilage** map can be correlated to a movement pattern of the joint to assess the affect of movement on **cartilage** wear. Changes in the thickness of **cartilage** over time can be determined so that therapies can be provided. The amount of **cartilage tissue** that has been lost, for example as a result of arthritis, can be estimated.

French Abstract
L'invention concerne des methodes d'evaluation de l'etat d'un **cartilage** dans une articulation et d'une perte de **cartilage** , en particulier dans un genou humain. Ces methodes consistent a convertir une image, par exemple une IRM, en reconstruction tridimensionnelle du **cartilage** . La reconstruction du **cartilage** peut etre mise en correlation avec une caracteristique de mouvement de l'articulation afin d'evaluer l'effet du mouvement sur l'usure du **cartilage** . Les changements d'epaisseur du **cartilage** avec le temps peuvent etre determines afin de pouvoir appliquer des therapies. L'invention permet d'evaluer la quantite de tissu **cartilagineux** qui a ete perdue, par exemple a cause de l'arthrite.

13/3,AB/18 (Item 9 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00841824
A METHOD FOR MAGNETIC RESONANCE **IMAGING OF THE LUNG**
PROCEDE D'IMAGERIE DU POUMON PAR RESONANCE MAGNETIQUE
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Patent and Priority Information (Country, Number, Date):
Patent: WO 200175464 A1 20011011 (WO 0175464)

Application: WO 2001EP3156 20010320 (PCT/WO EP0103156)
Priority Application: EP 2000106635 20000328
Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR
(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 4630

English Abstract
A method for the assessment of pulmonary ventilation and lung perfusion through **Magnetic Resonance** Imaging (**MRI**), comprising the steps of: positioning a human subject in an **MRI** apparatus, delivering a hyperpolarized noble gas to the subject by inhalation, followed by a breath-hold period, during which a bolus of a contrast agent for **MRI** is injected intravenously, acquiring, during the breath-hold period, at least one **MR** image of the lungs prior to the bolus intravenous injection and at least one **MR** image thereafter.

French Abstract
L'invention concerne un procede d'evaluation de la ventilation pulmonaire et de la perfusion de poumon au moyen d'imagerie par resonance magnetique (IRM) qui consiste a positionner un sujet humain dans un appareil d'IRM, a administrer au sujet, par inhalation, un gaz noble hyperpolarise, suivi d'une duree de blocage de la respiration durant laquelle un bol d'un agent de contraste pour l'IRM est injecte par voie intraveineuse, et a acquerir, lors de la periode de blocage de respiration, au moins une image IRM des poumons avant l'injection intraveineuse et au moins une image IRM apres.

13/3,AB/19 (Item 10 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00757535
SODIUM MAGNETIC RESONANCE IMAGING USED IN DIAGNOSING TUMORS AND ASSESSING RESPONSE TO TREATMENT
IMAGERIE A RESONANCE MAGNETIQUE AU SODIUM UTLISEE DANS LE DIAGNOSTIC DE TUMEURS ET L'EVALUATION D'UNE REPONSE AU TRAITEMENT
Patent Applicant/Assignee:
THE TRUSTEES OF COLUMBIA UNIVERSITY IN THE CITY OF NEW YORK, West 116th Street and Broadway, New York, NY 10027, US, US (Residence), US (Nationality)
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Legal Representative:
WHITE John P (agent), Cooper & Dunham LLP, 1185 Avenue of the Americas, New York, NY 10036, US,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200069336 A1 20001123 (WO 0069336)
Application: WO 2000US13186 20000512 (PCT/WO US0013186)

Priority Application: US 99317068 19990513
Designated States: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
(AP) GH GM KE LS MW SD SL SZ TZ UG ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 21119

English Abstract
The present invention provides a method for acquiring **magnetic resonance** data from a sample by: a) applying a radio frequency pulse to a sample in a magnetic field, thereby causing alignment of nuclei populations within the sample, b) applying a radio frequency pulse at a set time interval (T"sub"I), thereby causing a measurable signal in the transverse plane, c) suppressing a nuclei population in the sample by suitably selecting T"sub"I or by applying a multiple quantum filter, d) applying image encoding or multiple quantum filters to the sample in (a), e) detecting and analyzing the output signal to obtain a weighted image, f) applying the magnetic field to the sample in (a), g) detecting and analyzing the output signal to obtain an unweighted image, and h) comparing the weighted and unweighted images. The present invention also provides a method of determining the effectiveness of chemotherapy, detecting and characterizing tumors or determining cell death or cellular dysfunction by administering a dose of antineoplastic agent to a subject prior to surgical removal of a cancerous tumor and applying the method for acquiring **magnetic resonance** data to determine if the antineoplastic agent has altered the nuclei populations in a subject.

French Abstract
L'invention concerne un procede d'acquisition de donnees en resonance magnetique a partir d'un echantillon (a) en appliquant une impulsion radiofrequence a un echantillon dans un champ magnetique, provoquant ainsi l'alignement de populations de noyaux au sein de l'echantillon, (b) en appliquant une pulsion radiofrequence a un intervalle de temps defini (T"sub"I), provoquant ainsi un signal mesurable dans le plan transversal, (c) en supprimant une population de noyaux dans l'echantillon en selectionnant de maniere appropriee T"sub"I ou en utilisant un filtre de quantum multiple, (d) en appliquant le codage d'image ou des filtres de quantum multiple a l'echantillon en (a), (e) en detectant et analysant le signal de sortie pour obtenir une image ponderee, (f) en appliquant le champ magnetique a l'echantillon en (a), (g) en detectant et analysant le signal de sortie pour obtenir une image non ponderee, et (h) en comparant les images ponderees et non ponderees. Cette invention concerne egalement un procede de determination de l'efficacite de la chimiotherapie, de detection et de distinction de tumeurs ou de determination de la mort ou du dysfonctionnement cellulaire en administrant une dose d'agent antineoplasique a un sujet avant ablation chirurgicale d'une tumeur cancereuse, et l'application de ce procede d'acquisition de donnees en resonance magnetique afin de determiner si l'agent antineoplastique a modifie les populations de noyaux chez le sujet.

13/3,AB/20 (Item 11 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00744750
METHOD FOR DETERMINING HAEMODYNAMIC INDICES BY USE OF TOMOGRAPHIC DATA
CALCUL DE COEFFICIENTS D'HEMODYNAMISME A PARTIR DE DONNEES TOMOGRAPHIQUES
Patent Applicant/Inventor:
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Legal Representative:
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Patent and Priority Information (Country, Number, Date):
Patent: WO 200057777 A1 20001005 (WO 0057777)
Application: WO 2000DK140 20000323 (PCT/WO DK0000140)
Priority Application: US 99126322 19990326; DK 99749 19990527
Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
(AP) GH GM KE LS MW SD SL SZ TZ UG ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 30350

English Abstract
Haemodynamic indices of an **organ** or a part of **tissue** are determined from a time series of tomographic data obtained by means of **Magnetic Resonance** Imaging. Maps of indices are produced, being significant of the dynamics of the capillary **tissue** flow acquired during rapid bolus injection of a tracer that stays mainly intravascular. The method may be used for evaluating the efficacy of a drug on an **organ** , or for obtaining information of the likelihood of recovery of an **organ** or part of **tissue** upon or during a period of insufficient vascular supply or during the progression of a chronic disease. The method may be used for discriminating between relevant therapy of an **organ** .

French Abstract
La presente invention concerne le calcul de coefficients d'hemodynamique se rapportant a un **organe** ou a une partie de tissu a partir de series temporelles de donnees tomographiques d'IRM (Imagerie par Resonance Magnetique). En l'occurrence, on produit des topogrammes d'indices caracteristiques de la dynamique des flux dans les tissus des capillaires tels qu'on en fait l'acquisition pendant l'injection bolus rapide d'un traceur restant principalement en milieu intravasculaire. Ce procede permet d'evaluer l'efficacite d'un medicament sur un **organe** , ou d'obtenir des informations sur la probabilite de la guerison d'un **organe** ou d'une partie de tissu en cas d'insuffisance vasculaire ou pendant l'evolution d'une affection chronique. Ce procede permet egalement de selectionner une therapie convenant a un **organe** .

13/3,AB/21 (Item 12 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00571973
ASSESSING THE CONDITION OF A JOINT AND PREVENTING DAMAGE
ESTIMATION DE L'ETAT D'UNE ARTICULATION ET PREVENTION DE LESIONS
Patent Applicant/Assignee:

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ANDRIACCHI Thomas P,
LANG Philipp,
NAPEL Sandy A,
Inventor(s):
ALEXANDER Eugene J,
ANDRIACCHI Thomas P,
LANG Philipp,
NAPEL Sandy A,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200035346 A2 20000622 (WO 0035346)
Application: WO 99US30265 19991216 (PCT/WO US9930265)
Priority Application: US 98112989 19981216
Designated States: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW GH GM KE LS MW SD SL SZ TZ UG ZW AM AZ BY KG KZ MD RU TJ TM AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
Publication Language: English
Fulltext Word Count: 31275

English Abstract
Methods are disclosed for assessing the condition of a **cartilage** in a joint, particularly a human knee. The methods include converting an image such as an **MRI** to a three dimensional map of the **cartilage** . The **cartilage** map is then correlated to a movement pattern of the joint to assess the affect of movement on **cartilage** wear. Reference markers useful in obtaining internal images of the **cartilage** and bone and external images of the limbs in a motion are described. The markers aid in correlating the various images. Changes in the thickness of **cartilage** over time can be determined so that therapies can be provided.

French Abstract
L'invention concerne un procede pour estimer l'etat d'un **cartilage** dans une articulation, notamment dans le genou d'un humain. Les procedes de l'invention consistent a convertir une image telle qu'une image de RMI en une carte du **cartilage** en trois dimensions. La carte du **cartilage** est ensuite correlee a un schema de mouvement de l'articulation, ce qui permet de faire une estimation de l'effet du mouvement sur l'usure du **cartilage** . L'invention concerne aussi des marqueurs de reference utiles pour obtenir des images internes du **cartilage** et de l'os et des images externes sur les membres en mouvement. Les marqueurs permettent de correler diverses images. On peut ainsi determiner les changements dans l'epaisseur du **cartilage** sur une periode de temps, ce qui permet de proceder a des therapies.

13/3,AB/22 (Item 13 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00555854
METHOD OF MAGNETIC RESONANCE **IMAGING**
PROCEDE D'IMAGERIE PAR RESONANCE MAGNETIQUE
Patent Applicant/Assignee:
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COCKBAIN Julian,
BJORNERUD Atle,

KELLAR Kenneth Edmund,
BRILEY-SAEBO Karen,
JOHANSSON Lars,
Inventor(s):
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KELLAR Kenneth Edmund,
BRILEY-SAEBO Karen,
JOHANSSON Lars,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200019227 A1 20000406 (WO 0019227)
Application: WO 99GB3134 19990921 (PCT/WO GB9903134)
Priority Application: GB 9821038 19980928
Designated States: AE AL AM AT AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ CZ DE DE DK DK DM EE EE ES FI FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW GH GM KE LS MW SD SL SZ TZ UG ZW AM AZ BY KG KZ MD RU TJ TM AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
Publication Language: English
Fulltext Word Count: 8091

English Abstract
The invention provides a method of **magnetic resonance** imaging of regional blood oxygenation which comprises administering into the vasculature of a vascularised human or non-human animal subject a T2 blood pool contrast agent, detecting a **magnetic resonance** signal from at least part of the vasculature of said subject into which said contrast agent distributes, and manipulating said signal to generate an indication of the partial pressure of oxygen (pO2) in at least part of said vasculature.

French Abstract
L'invention concerne un procede d'imagerie par resonance magnetique de l'oxygenation locale du sang; il consiste a administrer a un humain ou a un animal, dans son systeme vasculaire, un agent de contraste T2 de pool sanguin intracardiaque, a detecter un signal de resonance magnetique provenant d'au moins une partie du systeme vasculaire dudit sujet dans lequel se produit la distribution de cet agent de contraste et a manipuler ce signal pour generer une indication de la pression partielle de l'oxygene (pO2) dans au moins une partie dudit systeme vasculaire.

13/3,AB/23 (Item 14 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00520642
PHARMACOLOGICAL MRI **(PHMRI)**
PROCEDE PHARMACOLOGIQUE D'IMAGERIE PAR RESONANCE MAGNETIQUE
Patent Applicant/Assignee:
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BRACCO S P A,
Inventor(s):
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Patent and Priority Information (Country, Number, Date):
Patent: WO 9951994 A1 19991014
Application: WO 99US7550 19990407 (PCT/WO US9907550)
Priority Application: US 9881048 19980408
Designated States: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE

ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT
LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT
UA UG UZ VN YU ZA ZW GH GM KE LS MW SD SL SZ UG ZW AM AZ BY KG KZ MD RU
TJ TM AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG
CI CM GA GN GW ML MR NE SN TD TG
Publication Language: English
Fulltext Word Count: 8483

English Abstract

A method for **Magnetic Resonance** Imaging (**MRI**) of changes in neurotransmitter and neuroreceptor activity as a metabolic response to diagnostic challenge or therapeutic treatment in a patient with suspected or already diagnosed mental illnesses of psychiatric, neurodegenerative or neurological nature, comprising the steps of: a) administering to said patient a drug eliciting an **MRI** detectable hemodynamic response; b) administering to said patient an **MRI** contrast agent with high magnetic susceptibility and c) measuring, in a spatially and temporally resolved manner, relative Cerebral Blood Volume (rCBV) changes associated to neuronal activation using T2- or T2*- weighted **MRI** scans at the equilibrium distribution of said contrast agent.

French Abstract

L'invention concerne un procede permettant d'observer par imagerie par resonance magnetique (IRM) les changements de l'activite des neurotransmetteurs et des neurorecepteurs sous forme d'une reponse metabolique au diagnostic ou au traitement chez un patient chez lequel on suspecte ou on a deja diagnostique des maladies mentales de type psychiatrique, neurodegeneratif ou neurologique. Ce procede comprend les etapes consistant a (a) administrer audit patient un produit elicitant une reponse hemodynamique pouvant etre detectee a l'IRM; (b) administrer audit patient un produit de contraste pour IRM presentant une forte sensibilite magnetique et (c) mesurer de maniere spaciale et temporelle, les changements du volume sanguin cerebral relatif associes a l'activation des neurones par des examens par IRM ponderes T2- ou T2*- avec une repartition a l'equilibre dudit produit de contraste.

13/3,AB/24 (Item 15 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00514490
SOLID-STATE MAGNETIC RESONANCE **IMAGING**
APPLICATION DE L'IMAGERIE PAR RESONANCE MAGNETIQUE SUR UN COMPOSANT SOLIDE
Patent Applicant/Assignee:
SKELSCAN INC,
Inventor(s):
ACKERMAN Jerome L,
GLIMCHER Melvin J,
WU Yaotang,
Patent and Priority Information (Country, Number, Date):
Patent: WO 9945842 A1 19990916
Application: WO 99US5532 19990312 (PCT/WO US9905532)
Priority Application: US 9841981 19980313
Designated States: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE
ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT
LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT
UA UG UZ VN YU ZW GH GM KE LS MW SD SL SZ UG ZW AM AZ BY KG KZ MD RU TJ
TM AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI
CM GA GN GW ML MR NE SN TD TG
Publication Language: English

Fulltext Word Count: 11674

English Abstract
Principles of **magnetic resonance** are employed to generate data, such as image intensity data, reflecting the spatial distribution of one or more isotopes carried in a solid-state specimen such as bone. The spatial distribution data can be employed, e.g., to calculate bone mineral density and/or degree of mineralization.

French Abstract
Dans cette invention, on utilise les principes de la resonance magnetique pour produire des donnees, telles que des donnees d'intensite d'image, exprimant la repartition spatiale d'un ou de plusieurs isotopes contenus dans un specimen solide tel qu'un os. En outre, on peut utiliser ces donnees de repartition spatiale par exemple pour calculer la densite minerale de l'os et/ou son degre de mineralisation.

13/3,AB/25 (Item 16 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00396496
ENHANCEMENT OF NMR AND MRI **IN THE PRESENCE OF HYPERPOLARIZED NOBLE GASES**
AMELIORATION DE LA RMN OU DE L'IRM PAR LA PRESENCE DE GAZ NOBLES HYPERPOLARISES
Patent Applicant/Assignee:
LAWRENCE BERKELEY NATIONAL LABORATORY,
PINES Alexander,
BUDINGER Thomas,
NAVON Gil,
SONG Yi-Qiao,
APPELT Stephan,
BIFONE Angelo,
TAYLOR Rebecca,
GOODSON Boyd,
SEYDOUX Roberto,
ROOM Toomas,
PIETRASS Tanja,
Inventor(s):
PINES Alexander,
BUDINGER Thomas,
NAVON Gil,
SONG Yi-Qiao,
APPELT Stephan,
BIFONE Angelo,
TAYLOR Rebecca,
GOODSON Boyd,
SEYDOUX Roberto,
ROOM Toomas,
PIETRASS Tanja,
Patent and Priority Information (Country, Number, Date):
Patent: WO 9737239 A1 19971009
Application: WO 97US5166 19970328 (PCT/WO US9705166)
Priority Application: US 9614321 19960329
Designated States: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH HU IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK TJ TM TR TT UA UG US UZ VN YU GH KE LS MW SD SZ UG AM AZ BY KG KZ MD RU TJ TM AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN ML MR NE SN TD TG
Publication Language: English

John Sims EIC 3700 308-4836

Fulltext Word Count: 19479

English Abstract
The present invention relates generally to nuclear **magnetic resonance** (NMR) techniques for both spectroscopy and imaging. More particularly, the present invention relates to methods in which hyperpolarized noble gases (e.g., Xe and He) are used to enhance and improve NMR and **MRI** . Additionally, the hyperpolarized gas solutions of the invention are useful both in vitro and in vivo to study the dynamics or structure of a system. When used with biological systems, either in vivo or in vitro, it is within the scope of the invention to target the hyperpolarized gas and deliver it to specific regions within the system.

French Abstract
La presente invention, qui concerne generalement les techniques de resonance magnetique nucleaire (RMN) appliquees aussi bien a spectroscopie qu'a l'imagerie, concerne plus particulierement des procedes dans lesquels on utilise des gaz nobles (par exemple le xenon et l'helium) hyperpolarises pour renforcer et ameliorer la RMN et l'IRM. En outre, les solutions de gaz hyperpolarises de l'invention conviennent particulierement pour l'etude, aussi bien in vitro qu'in vivo, de la dynamique ou de la structure d'un systeme. Dans le cas des systemes biologiques, in vivo ou in vitro, l'invention consiste a cibler le gaz hyperpolarise et a l'apporter dans des regions specifiques a l'interieur du systeme.

13/3,AB/26 (Item 17 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00369305
A METHOD OF DETERMINING OXYGEN CONCENTRATION IN A SAMPLE
PROCEDE SERVANT A DETERMINER LA CONCENTRATION D'OXYGENE DANS UN ECHANTILLON
Patent Applicant/Assignee:
NYCOMED IMAGING A S,
COCKBAIN Julian Roderick Michaelson,
ARDENKJAER-LARSEN Jan Henrik,
LEUNBACH Ib,
Inventor(s):
ARDENKJAER-LARSEN Jan Henrik,
LEUNBACH Ib,
Patent and Priority Information (Country, Number, Date):
Patent: WO 9709633 A1 19970313
Application: WO 96GB2198 19960906 (PCT/WO GB9602198)
Priority Application: GB 9518442 19950908; US 95546146 19951020; GB 9612931 19960620
Designated States: AL AM AT AU AZ BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE HU IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK TJ TM TR TT UA UG US UZ VN KE LS MW SD SZ UG AM AZ BY KG KZ MD RU TJ TM AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN ML MR NE SN TD TG
Publication Language: English
Fulltext Word Count: 16525

English Abstract
A method for determining the oxygen concentration of a sample using electron spin resonance enhanced **magnetic resonance** imaging.

French Abstract
Le procede faisant l'objet de cette invention sert a determiner la

concentration d'oxygene dans un echantillon en utilisant l'imagerie par resonance magnetique amelioree par resonance du spin electronique.

13/3,AB/27 (Item 18 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00320349
THREE-DIMENSIONAL ANISOTROPY CONTRAST MAGNETIC RESONANCE **IMAGING**
IMAGERIE PAR RESONANCE MAGNETIQUE A CONTRASTE ANISOTROPE TRIDIMENSIONNEL
Patent Applicant/Assignee:
THE REGENTS OF THE UNIVERSITY OF CALIFORNIA,
Inventor(s):
NAKADA Tsutomu,
Patent and Priority Information (Country, Number, Date):
Patent: WO 9602857 A1 19960201
Application: WO 95US8731 19950712 (PCT/WO US9508731)
Priority Application: US 94277670 19940719
Designated States: AU CA JP AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE
Publication Language: English
Fulltext Word Count: 5157

English Abstract
A method for contrast **magnetic resonance** imaging (**MRI**) based on three axial anisotropic diffusion weighted images (DWIs) of the identical imaging plane. Three primary colors, red (30a), green (30b), and blue (30c), are first assigned (25) to the gray scale of the three axial, x-, y-, z-axis (20a-c), anisotropic DWIs. These three primary color images are then vectorially combined (35) to form a single image in full visible color spectrum (40). Since the sum of the three primary colors of the same intensity results in cancellation (white out), the process effectively eliminates the background signals from isotropic water motion. Accordingly, each pixel of the final color image exhibits a color of a unique frequency, according to the balance of red, green, and blue, reflecting direction of anisotropic water motion in space.

French Abstract
L'invention se rapporte a un procede d'imagerie par resonance magnetique (IRM) a contraste base sur des images a ponderation anisotrope tridimensionnelles du plan d'imagerie identique. Trois couleurs primaires, rouge (30a), vert (30b) et bleu (30c), sont d'abord attribuees (25) a l'echelle de gris des images a ponderation par diffusion anisotrope selon trois axes, x, y, z (20a-c). Ces trois images a couleurs primaires sont ensuite combinees (35) vectoriellement pour former une image unique dans la totalite du spectre (40) des couleurs visibles. Puisque la somme des trois couleurs primaires de meme intensite entraine l'effacement (par mise a blanc), le procede elimine efficacement le signaux de fond provenant du deplacement isotrope de l'eau. En consequence, chaque pixel de l'image en couleur finale presente une couleur d'une frequence unique, selon l'equilibre du sens de reflexion rouge, vert et bleu du deplacement anisotrope de l'eau dans l'espace.

13/3,AB/28 (Item 19 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00249468
MAGNETIC RESONANCE **IMAGING USING PATTERN RECOGNITION**
RESONANCE MAGNETIQUE NUCLEAIRE UTILISANT UNE IDENTIFICATION DE MOTIFS

John Sims EIC 3700 308-4836

Patent Applicant/Assignee:
UNIVERSITY OF WASHINGTON,
SMITH Justin P,
Inventor(s):
SMITH Justin P,
Patent and Priority Information (Country, Number, Date):
Patent: WO 9323762 A1 19931125
Application: WO 93US4572 19930513 (PCT/WO US9304572)
Priority Application: US 92565 19920515
Designated States: AT AU BB BG BR CA CH CZ DE DK ES FI GB HU JP KP KR KZ LK LU MG MN MW NL NO NZ PL PT RO RU SD SE SK UA US VN AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN ML MR NE SN TD TG
Publication Language: German
Fulltext Word Count: 8546

English Abstract
An **MRI** technique in which the similarity of samples from different portions of a body is determined and displayed. In one embodiment, the method can be used to track the spread of a known primary tumor to other portions of a patient's body. The **MRI** apparatus is used to produce a training set comprising one or more training samples. The training set is formed from a plurality of congruent first images of a training region of the body. Each first image is produced using an **MRI** pulse sequence different from the pulse sequences used to produce the other first images. Each first image comprises an array of pixels, and each training sample comprises a spatially aligned set of pixels from each first image. The same technique is used to produce a plurality of test samples corresponding to a test region of the same body. The test samples are produced using the same pulse sequences as the training samples. The training and test samples are then compared, to produce similarity data indicating, for each test sample, the degree of similarity between the test sample and the training samples. A display is then generated based upon the similarity data.

French Abstract
L'invention se rapporte a une technique RMN dans laquelle la similarite des echantillons provenant de differentes parties d'un corps est determinee et visulaisee. Dans un mode de realisation, le procede peut etre utilise pour suivre la propagation d'une tumeur primaire connue sur d'autres parties du corps d'un patient. L'appareil RMN est utilise pour obtenir un ensemble d'exercices comportant un ou plusieurs echantillons d'exercices. L'ensemble d'exercices est forme d'une pluralite de premieres images conformes d'une region d'exercice du corps. Chaque premiere image est obtenue a l'aide d'une sequence d'impulsions RMN differente des sequences d'impulsions utilisees pour obtenir les autres premieres images. Chaque premiere image comprend une rangee de pixels et chaque echantillon d'exercice comporte un jeu de pixels, aligne dans l'espace, a partir de chaque premiere image. La meme technique est utilisee pour obtenir une pluralite d'echantillons tests correspondant a une region test du meme corps. Les echantillons tests sont produits a l'aide des memes sequences d'impulsions que les echantillons d'exercice. On compare ensuite les echantillons d'exercice et les echantillons tests pour obtenir des donnees de similarite indiquant, pour chaque echantillon test, le degre de similarite entre l'echantillon test et les echantillons d'exercice. On genere ensuite un affichage sur la base des donnees de similarite.

13/3,AB/29 (Item 20 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00244135
IMAGE NEUROGRAPHY AND DIFFUSION ANISOTROPY IMAGING
SYSTEME D'IMAGERIE NEUROGRAPHIQUE A ANISOTROPIE DE DIFFUSION
Patent Applicant/Assignee:
UNIVERSITY OF WASHINGTON,
ST GEORGE'S HOSPITAL MEDICAL SCHOOL,
Inventor(s):
FILLER Aaron G,
HOWE Franklyn A,
TSURUDA Jay S,
RICHARDS Todd L,
Patent and Priority Information (Country, Number, Date):
Patent: WO 9318415 A1 19930916
Application: WO 93US2036 19930308 (PCT/WO US9302036)
Priority Application: GB 925058 19920309; GB 925541 19920313; GB 927013 19920330; GB 929648 19920505; GB 9210810 19920521; GB 9216383 19920731; GB 931268 19930122
Designated States: AT AU BB BG BR CA CH CZ DE DK ES FI GB HU JP KP KR LK LU MG MN MW NL NO NZ PL PT RO RU SD SE SK UA AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN ML MR SN TD TG
Publication Language: English
Fulltext Word Count: 24454

English Abstract
A neurography system (10) is disclosed for generating diagnostically useful images of neural **tissue** (i.e. neurograms) employing a modified **magnetic resonance** imaging system (14). In one embodiment, the neurography system selectively images neural **tissue** by employing one or more gradients to discriminate diffusion anisotropy in the **tissue** and further enhances the image by suppressing the contribution of fat to the image. The neurography system is part of a broader medical system (12), which may include an auxiliary data collection system (22), diagnostic system (24), therapeutic system (26), surgical system (28), and training system (30). These various systems are all constructed to take advantage of the information provided by the neurography system regarding neural networks, which information was heretofore unavailable.

French Abstract
Un systeme neurographique (10) permet d'obtenir des images diagnostiques utiles des tissus nerveux (des neurogrammes) grace a un systeme modifie d'imagerie par resonance magnetique (14). Dans une variante, ce systeme neurographique donne des images selectives des tissus nerveux, en recourant a un ou plusieurs gradients qui permettent de discriminer l'anisotropie de diffusion dans un tissu, et il ameliore encore l'image en supprimant la contribution qu'y apportent les graisses. Ce systeme neurographique fait partie d'un equipement medical plus important (12) pouvant inclure un systeme auxiliaire de collecte de donnees (22), un systeme diagnostique (24), un systeme therapeutique (26), un equipement chirurgical (28) et un dispositif de formation professionnelle (30). Tous ces elements sont concus de maniere a tirer parti des informations fournies par le systeme neurographique sur les reseaux nerveux, informations qui auparavant n'existaient pas.

13/3,AB/30 (Item 21 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00231151
METHOD TO DISPLAY WITH COMBINED COLOUR MULTIPLIE QUANTITATIVE IMAGES OF

TISSUE PARAMETERS **OBTAINED WITH NUCLEAR** MAGNETIC RESONANCE
PROCEDE D'AFFICHAGE VERSICOLORE DE MULTIPLES IMAGES QUANTITATIVES DE PARAMETRES TISSULAIRES OBTENUES PAR RESONANCE MAGNETIQUE NUCLEAIRE
Patent Applicant/Assignee:
CONSIGLIO NAZIONALE DELLE RICERCHE,
ALFANO Bruno,
Inventor(s):
ALFANO Bruno,
Patent and Priority Information (Country, Number, Date):
Patent: WO 9305405 A1 19930318
Application: WO 92IT112 19920909 (PCT/WO IT9200112)
Priority Application: IT 91RM680 19910912
Designated States: AT AU BB BG BR CA CH CS DE DK ES FI GB HU JP KP KR LK LU MG MN MW NL NO PL RO RU SD SE US AT BE CH DE DK ES FR GB GR IE IT LU MC NL SE BF BJ CF CG CI CM GA GN ML MR SN TD TG
Publication Language: English
Fulltext Word Count: 3219

English Abstract
A method to display with combined colour multiple quantitative images of **tissue parameters** obtained with nuclear **magnetic resonance** is disclosed, which method allows an increased diagnostic accuracy, a higher sensivity to pathologies of small extent, a standardization of acquisition sequences and a shortening of the total time required for performing the examination to be realized.

French Abstract
Procede d'affichage versicolore de multiples images quantitatives de parametres tissulaires obtenues par resonance magnetique nucleaire. Le procede permet d'augmenter la precision du diagnostic, d'accroitre la sensibilite aux pathologies de faible ampleur, de normaliser les sequences de saisie et de reduire le temps global necessaire a la realisation de l'examen.

13/3,AB/31 (Item 22 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00136344
LOW R.F. DOSAGE MAGNETIC RESONANCE **IMAGING OF HIGH VELOCITY FLOWS**
FORMATION D'IMAGES DE MATIERES S'ECOULANT A VITESSE ELEVEE PAR RESONANCE MAGNETIQUE A FAIBLE DOSAGE HF
Patent Applicant/Assignee:
PICKER INTERNATIONAL INC,
Inventor(s):
NAYLER Graham Leslie,
PATTANY Pradip Mathuradas,
Patent and Priority Information (Country, Number, Date):
Patent: WO 8701201 A1 19870226
Application: WO 86GB459 19860731 (PCT/WO GB8600459)
Priority Application: US 85757 19850816; US 85750 19851115
Designated States: DE GB JP NL
Publication Language: English
Fulltext Word Count: 6792

English Abstract
A main magnetic field coil (10) and control (12) cause a generally uniform main magnetic field through an image region. A resonance excitation control (22) causes an R.F. coil (20) to generate excitation pulses (100). A slice gradient control (32) and a read gradient control

(34) cause a gradient coil (30) to generate complementary slice selection gradient profiles (112, 114) and complementary read gradient profiles (122, 124) in such a manner that the effective first moment in time is substantially zero. By time shifting a pulse in one or both of the slice selection and read gradient sequences (Figs. 3 and 4), resonating nuclei in the selected slice can be phase encoded. A transform algorithm (40) transforms field echo signals (102) received by the R.F. coil into image representations. A first memory (54) receives real and imaginary portions of the image representations when the read and slice selection gradients are not shifted and a second memory (56) receives the image representations when one or both of the read and slice selection gradients are time shifted. A phase difference map (70) is calculated (60) from the arctangent of phase difference values derived from the first and second images. The intensity of each pixel of the phase difference map varies with phase shift, hence velocity.

French Abstract

Une bobine de champ magnetique principal (10) et une commande (12) produisent un champ magnetique principal generalement uniforme a travers une region de l'image. Une bobine HF (20) soumise a une commande d'excitation par resonance (22) produit des impulsions d'excitation (100). Une bobine de gradient (30) soumise a une commande de gradient de tranche (32) et a une commande de gradient de lecture (34) produit des profils complementaires de gradient de selection de tranche (112, 114) et des profils complementaires de gradient de lecture (122, 124) de sorte que le premier moment effectif dans le temps est sensiblement egal a zero. En decalant dans le temps une impulsion dans l'une ou dans les deux sequences de gradient de selection de tranche et de lecture (figures 3 et 4), les signaux produits par les noyaux dans la tranche selectionnee peuvent etre enregistres par modulation de phase. Un algorithme de transformation (40) transforme les signaux d'echo de champ (32) recus par la bobine HF en des representations d'images. Une premiere memoire (54) recoit des parties reelles et imaginaires des representations d'images lorsque les gradients de selection de lecture et de tranche ne sont pas decales et une deuxieme memoire (56) recoit les representations d'images lorsqu'un gradient ou les deux gradients de selection de lecture et de tranche sont decales dans le temps. Une carte de la difference de phases (70) est calculee (60) a partir de l'arcotangente des valeurs de differences de phases derivees des premiere et deuxieme images. L'intensite de chaque pixel de la carte de difference de phases varie en fonction du dephasage, et par consequent de la vitesse.

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John Sims EIC 3700 308-4836

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? ds

Set      Items   Description
S1          13   E2,E3
S2       18836   MRI OR MAGNETIC()RESONAN?
S3           1   S1 AND S2
S4         156   LONGITUD?()RELAX?
S5         131   TRANSVERS?()RELAX?
S6        1038   MAGNETI?()(TRANSFER? OR RATIO?)
S7         175   S2 AND S4:S6
S8     1651318   MEASUR? OR QUANTI?
S9         104   S7 AND S8
S10     193000   TISSUE? OR CARTILAG? OR BODY(2N)PART? ?
S11      95883   PIXEL? ?
S12          6   S9 AND S11
S13          8   S9 AND S10
S14         10   S12 OR S13
? show files
File 347:JAPIO Oct 1976-2003/Sep(Updated 040105)
         (c) 2004 JPO & JAPIO
File 350:Derwent WPIX 1963-2004/UD,UM &UP=200407
         (c) 2004  Thomson Derwent
File 371:French Patents 1961-2002/BOPI 200209
         (c) 2002 INPI.  All rts. reserv.
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John Sims EIC 3700 308-4836

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? ds

Set      Items   Description
S1       64532   MR OR MRI OR MAGNETIC?()RESONAN?
S2      303433   ORGAN? ? OR TISSUE? ? OR CARTILAG? OR BODY(2N)PART? ?
S3         355   LONGITUD?()RELAXAT?
S4         389   TRANSVERS?()RELAXAT?
S5         150   (MAGNETIS? OR MAGNETIZ?)()(TRANSFER? ? OR RATIO? ?)
S6         567   S1 AND S3:S5
S7         402   S2 AND S6
S8       16763   PIXEL?(2N)PIXEL?
S9          32   S7 AND S8
S10     448612   PROPERTY OR PROPERTIES
S11     287615   PARAMETER?
S12         31   S9 AND S10:S11
S13         31   S12
S14      89266   T1 OR T2?
S15       8362   S1 AND S14
S16       7930   S15 NOT S6
S17         60   S16 AND S2 AND S8 AND S10 AND S11
S18         60   S17 NOT S12
S19         30   S18 AND PY<2001
S20        432   S14 AND S6
S21     300030   LONGITUD? OR TRANSVERS?(4N)RELAXATION? ?
S22       7866   S1 AND S21
S23        612   (LONGITUD? OR TRANSVERS?)()(RELAXATION? OR RATE? ?)
S24        487   S1 AND S23
S25          3   S24 NOT S6
? show files
File 348:EUROPEAN PATENTS 1978-2004/Jan W04
         (c) 2004 European Patent Office
File 349:PCT FULLTEXT 1979-2002/UB=20040129,UT=20040122
         (c) 2004 WIPO/Univentio
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John Sims EIC 3700 308-4836

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? ds

Set      Items   Description
S1     1048923   MR OR MRI OR MAGNETIC()RESONANC?
S2     1253255   IMAGING?
S3     9335163   PARAMETER? OR PROPERTY OR PROPERTIES OR CHARACTERISTIC?
S4        8678   (LONGITUD? OR TRANSVERS?)()(RELAXATION? OR RATE? ?)
S5        5819   (MAGNETIS? OR MAGNETIZ?)()(TRANSFER? OR RATIO? ?)
S6     1829793   S1:S2
S7       14282   S4:S5
S8       10164   S6 AND S7
S9     4843876   TISSUE? ? OR CARTILAG? OR BODY()PART? ? OR ORGAN? ?
S10        936   S3 AND S8 AND S9
S11       5147   PIXEL?(2N)PIXEL?
S12         12   S10 AND S11
S13          6   RD (unique items)
S14       8207   TINF1 OR TINF()1 OR TINF2 OR TINF()2
S15       7939   S14 NOT S4
S16      13677   S15 OR S5
S17          9   S6 AND S16 AND S9 AND S11
S18          9   S17 NOT S12
S19          9   RD (unique items)
S20         21   S12 OR S19
S21         13   S20 AND S3
S22          0   S21 NOT (S12 OR S17)
S23          1   S21 NOT S12
S24     154120   T1 OR T2
S25      51437   S1 AND S2 AND S3
S26         95   S25 AND S9 AND S11
S27         85   S26 NOT S4 NOT S14
S28         43   RD (unique items)
S29         32   S28 AND PY<2001
S30         32   S29 NOT S18 NOT S21
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File   2:INSPEC 1969-2004/Jan W3
         (c) 2004 Institution of Electrical Engineers
File   5:Biosis Previews(R) 1969-2004/Jan W4
         (c) 2004 BIOSIS
File   6:NTIS 1964-2004/Feb W1
         (c) 2004 NTIS, Intl Cpyrght All Rights Res
File   8:Ei Compendex(R) 1970-2004/Jan W3
         (c) 2004 Elsevier Eng.  Info. Inc.
File  34:SciSearch(R) Cited Ref Sci 1990-2004/Jan W4
         (c) 2004 Inst for Sci Info
File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec
         (c) 1998 Inst for Sci Info
File  73:EMBASE 1974-2004/Jan W4
         (c) 2004 Elsevier Science B.V.
File 155:MEDLINE(R) 1966-2004/Jan W4
         (c) format only 2004 The Dialog Corp.
?
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John Sims EIC 3700 308-4836

STIC Search Report
EIC 3700

STIC Database Tracking Number: 112871

TO:	From:
Jeoyuh Lin **Location: cp2 4c08** **Art Unit: 3737** **Tu sday, February 03, 2004** **Case Serial Number: 09/828070**	**John Sims** **Location: EIC 3700** **CP2, 2C08** **Phone: 308-4836** **john.sims@uspto.gov**

Search Notes

Jeo:
I pulled up quite a bit based on the words and concepts expressed in the claims. Since I'm not a subject expert, however, I would urge you to at least scan over all the results for relevancy.

JS

STIC Search Results Feedback Form

EIC 3700

Questions about the scope or the results of the search? Contact ***the EIC searcher or contact:***

John Sims, EIC 3700 Team Leader
308-4836, CP2-2C08

Voluntary Results Feedback Form

- *I am an examiner in Workgroup:* ☐ *Example: 3730*
- *Relevant prior art **found**, search results used as follows:*
  - ☐ 102 rejection
  - ☐ 103 rejection
  - ☐ Cited as being of interest.
  - ☐ Helped examiner better understand the invention.
  - ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
  (journal articles, conference proceedings, new product announcements etc.)

- *Relevant prior art **not found:***
  - ☐ Results verified the lack of relevant prior art (helped determine patentability).
  - ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

Drop off or send completed forms to STIC/EIC3700 CP2 2C08